

# RETHINKING OBVIOUSNESS

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A fundamental principle of patent law is that a patent may not be granted on an invention that would have been obvious to a person of ordinary skill in the art at the time of the invention. Indeed, the nonobviousness requirement is generally considered to be the core requirement of patentability. It is also among the most commonly litigated issues in patent infringement cases, resulting in more invalidity determinations than any other defense. Despite the centrality of obviousness to patent jurisprudence, one element of the obviousness analysis is rarely, if ever, challenged: that obviousness is a binary; i.e., there is no middle ground between an obvious invention—entitled to zero patent protection—and a nonobvious invention—entitled to full patent protection.

This Article challenges that binary framework, arguing that the case law, the literature, and the plain meaning of the word “obvious” indicate that the obviousness analysis should not, in every instance, be limited to only two outcomes. It proposes that a third option should be available to decisionmakers: a claimed invention would have been partially obvious at the time of the invention and is therefore entitled to a half-term of patent protection. The Article then examines the mechanics, challenges, and benefits of a ternary obviousness framework, concluding that it would more accurately reflect the reality of obviousness determinations, and that it would ameliorate several criticisms of the patent laws.

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### INTRODUCTION

Congress brought significant change to United States patent law when it passed the Patent Act of 1952.<sup>1</sup> One of the most noteworthy elements of the Act was the codification of a concept that had long been part of the case law. Section 103 of the Act established that “[a] patent may not be obtained . . . [if] the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.”<sup>2</sup> Nonobviousness thus formally joined novelty and usefulness as a requirement of patentability.<sup>3</sup>

Nonobviousness has become the core requirement of patentability.<sup>4</sup> More judicial ink likely has been spilt on the topic of obviousness than

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1. Patent Act of 1952, Pub. L. No. 82-593, 66 Stat. 792 (1952).

2. *Id.* § 103.

3. See 35 U.S.C. § 101 (2012) (“Whoever invents or discovers any *new* and *useful* process, machine, manufacture, or composition of matter . . . may obtain a patent therefor . . . .” (emphasis added)); see also, e.g., *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 150–51 (1989) (“The federal patent system thus embodies a carefully crafted bargain for encouraging the creation and disclosure of *new, useful, and nonobvious* advances in technology and design in return for the exclusive right to practice the invention for a period of years.” (emphasis added)).

4. See, e.g., Motion for Leave to File Amicus Curiae and Brief of Twenty-Four Intellectual Property Law Professors as Amici Curiae in Support of Petitioner at 3, *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007) (No. 04-1350) [hereinafter Amicus Brief], available at <http://patentlaw.typepad.com/patent/ksramicus.pdf> (“[T]he requirement of non-obviousness is the sole provision that fully implements the core notion of patent law that patents should be granted only for significant advances over previously known technology.”); Irving Kayton, *Nonobviousness of the Novel Invention—35 USC § 103*, in 1 PATENT PREPARATION & PROSECUTION PRACTICE 5–1 (Irving Kayton ed., 2d ed. 1983), reprinted in NONOBVIOUSNESS—THE ULTIMATE CONDITION OF PATENTABILITY 2:101 (John F. Witherspoon ed., 1980); ROBERT PATRICK MERGES & JOHN FITZGERALD DUFFY, PATENT LAW AND POLICY: CASES AND MATERIALS 611 (4th ed. 2007) (describing the nonobviousness requirement as “the most important of the basic patent requirements”); Gregory Mandel, *The Non-Obvious Problem: How the Indeterminate Nonobviousness Standard Produces Excessive Patent Grants*, 42 U.C. DAVIS L. REV. 57, 62 (2008) (“The core requirement for obtaining a patent is that the invention was not obvious at the time it was made.”).

on any other topic in patent law. Indeed, Allison and Lemley's 1998 empirical study on patent litigation revealed that obviousness was, by a significant margin, "both the most commonly litigated patent validity issue and the patent validity requirement most likely to result in a patent being held invalid."<sup>5</sup> An update to that study published in 2014 showed that the issue of obviousness remains one of the most frequently raised issues in patent litigation.<sup>6</sup> Looking beyond trial-level statistics, the Federal Circuit grapples with the issue of obviousness dozens of times per year<sup>7</sup> and has considered it *en banc* at least six times<sup>8</sup> since the inception of the court in 1982.<sup>9</sup> The Supreme Court likewise has analyzed the nonobviousness requirement on several occasions.<sup>10</sup>

Scholars, commentators, and practitioners alike have also struggled with and debated the concept of nonobviousness. Every year, without fail, numerous journal articles are published in which various elements of the nonobviousness analysis are discussed and criticized.<sup>11</sup>

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5. Gregory N. Mandel, *Patently Non-Obvious: Empirical Demonstration that the Hindsight Bias Renders Patent Decisions Irrational*, 67 OHIO ST. L.J. 1391, 1398 & n.17 (2006) (citing John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 185, 208–09 (1998)). Obviousness was litigated in nearly twice as many cases as the second most litigated issue (anticipation under § 102). Allison & Lemley, *supra* at 209. Obviousness was a ground for invalidity in over 30% more cases than any other ground for invalidity. *Id.* at 208.

6. John R. Allison, Mark A. Lemley & David L. Schwartz, *Understanding the Realities of Modern Patent Litigation*, 92 TEX. L. REV. 1769, 1785 (2014).

7. See Jason Rantanen, *CAFC Obviousness Decision Trends and KSR*, PATENTLY-O (Dec. 18, 2012), <http://patentlyo.com/patent/2012/12/cafc-obviousness-decision-trends.html>.

8. Either as the primary or a secondary issue. See, e.g., *Honeywell Int'l Inc. v. Hamilton Sundstrand Corp.*, 370 F.3d 1131 (Fed. Cir. 2004) (en banc); *Hilton Davis Chem. Co. v. Warner-Jenkinson Co.*, 62 F.3d 1512 (Fed. Cir. 1995) (en banc); *In re Donaldson Co.*, 16 F.3d 1189 (Fed. Cir. 1994) (en banc); *In re Dillon*, 919 F.2d 688 (Fed. Cir. 1990) (en banc); *In re Etter*, 756 F.2d 852 (Fed. Cir. 1985) (en banc); *Gardner v. TEC Sys., Inc.*, 725 F.2d 1338 (Fed. Cir. 1984) (en banc).

9. See Federal Courts Improvement Act of 1982, Pub. L. No. 97-164, 96 Stat. 25 (1982) (codified as amended in scattered sections of 28 U.S.C.).

10. See, e.g., *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007); *Dennison Mfg. Co. v. Panduit Corp.*, 475 U.S. 809 (1986); *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273 (1976); *Dann v. Johnston*, 425 U.S. 219 (1976); *Anderson's-Black Rock, Inc. v. Pavement Salvage Co.*, 396 U.S. 57 (1969); *United States v. Adams*, 383 U.S. 39 (1966); *Graham v. John Deere Co.*, 383 U.S. 1 (1966).

11. See, e.g., Kevin C. Adam, *Obviously Obvious: Federal Circuit Reverses District Court's Decision That Online "Shopping Cart" Patents Are Nonobvious as a Matter of Law—Soverain Software LLC v. Newegg Inc.*, 1 SUFFOLK U. L. REV. ONLINE 9 (2013), <http://suffolklawreview.org/adam-patent/>; Thomas G. Hungar & Rajiv Mohan, *A Case Study Regarding the Ongoing Dialogue Between the Federal Circuit and the Supreme Court: The Federal Circuit's Implementation of KSR v. Teleflex*, 66 SMU L. REV. 559 (2013); Shawn P. Miller, *Where's the Innovation: An Analysis of the Quantity and Qualities of Anticipated and Obvious Patents*, 18 VA. J.L.

Although the nonobviousness requirement has been analyzed from virtually every angle, by trial courts, by appellate courts, by the Supreme Court, and by attorneys from every branch of the legal profession, one theme is consistent throughout all of obviousness jurisprudence: the outcome of an obviousness analysis is binary.<sup>12</sup> That is, a claimed invention either *would* have been obvious, or it *would not* have been obvious, at the time of the invention. There is no middle ground. As one scholar accurately noted, “[P]atent protection is either *on* or *off*: If an invention meets the threshold standards of patentability, it is accorded full protection. If it barely misses, the patent regime gives it no protection.”<sup>13</sup>

But what if the universal assumption that obviousness should be treated as a binary is misguided? What if the concept of “obviousness” is better measured in terms of degree than by a “yes” or “no”? Would that—or should that—impact obviousness jurisprudence?

The purpose of this Article is to suggest that, after six decades of evaluating the obviousness of inventions pursuant to the mandate of § 103, it is time to recalibrate our thinking on the issue. Obviousness is *not* always amenable to a binary framework. Some inventions are more obvious than others. Some are plainly obvious; some are plainly nonobvious. And some inventions fall somewhere in between. Obviousness jurisprudence and scholarship fail to address that reality, if they consider it at all. This Article attempts to open the dialogue on recognizing and addressing the fact that degrees of obviousness exist and should be reflected in the law. Ultimately, it proposes that decisionmakers should stop being forced to jam a square peg into a round hole. They should stop being required to pick from two inadequate options: (1) the claimed invention would have been obvious at the time of the invention and therefore is wholly invalid, or (2) the claimed invention would not have been obvious at the time of the invention and therefore is valid and entitled to its full term of patent protection. Instead, a third option should be available to decisionmakers considering the validity of patents: (3) the claimed invention would

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& TECH. 1 (2013); Jason Rantanen, *The Federal Circuit's New Obviousness Jurisprudence: An Empirical Study*, 16 STAN. TECH. L. REV. 709 (2013); Brenda M. Simon, *The Implications of Technological Advancement for Obviousness*, 19 MICH. TELECOMM. & TECH. L. REV. 331 (2013).

12. See, e.g., *Tapco Int'l Corp. v. Van Mark Prods. Corp.*, 18 F. App'x 865, 870 (Fed. Cir. 2001) (“The ultimate determination of whether an invention is or is not obvious . . . .”); *In re Petering*, 301 F.2d 676, 682 (C.C.P.A. 1962) (“It is our opinion, however, that Congress did not contemplate various *degrees* of obviousness in section 103.”).

13. Eric E. Johnson, *Calibrating Patent Lifetimes*, 22 SANTA CLARA COMPUTER & HIGH TECH. L.J. 269, 270 (2006).

have been partially obvious and is entitled to patent protection, but for a reduced amount of time.

To that end, Part I of this Article provides background information on two points so that readers less familiar with the obviousness doctrine will have a basis from which to judge whether or not it lends itself to a binary set of outcomes. First, the mechanics of the obviousness analysis are discussed. Second, the history of patent terms is reviewed to show that reduction of patent terms is not as unprecedented an idea as it may initially seem.

Part II of this Article attempts to establish that degrees of obviousness exist and create significant problems for the current binary framework. It examines the plain meaning of the word “obvious” and then considers support from both the case law and the academic literature to show that it is not always possible to determine reliably whether a given invention would have been obvious at the time of the invention.

Part III of this Article proposes a framework to account for degrees of obviousness, concluding that, for ease of administration, some decisionmakers should be permitted to cut the term of patent protection in half in certain situations. It also examines various details of the proposal, including when patent term should be cut and by whom.

Part IV examines the benefits and challenges associated with the proposal, acknowledging that there are several hurdles to implementing such a framework, but arguing that the framework generally would be beneficial and that it would partially address several popular and recurring concerns about the U.S. patent system, including the presumption of validity and the role of nonpracticing entities.

## I. BACKGROUND

### A. *The Obviousness Analysis in a Nutshell*

Parties sued for patent infringement frequently allege as an affirmative defense and counterclaim that the patent at issue is invalid because it would have been obvious to a person having ordinary skill in the art (“PHOSITA”)<sup>14</sup> at the time of the invention.<sup>15</sup> The ultimate

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14. “Person having ordinary skill in the art” is a term of art in patent law that comes directly from 35 U.S.C. § 103. A PHOSITA is generally understood to be a hypothetical, reasonably skilled person who is presumed to know all of the relevant art in the field of invention and analogous technical fields. *See, e.g., Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 454 (Fed. Cir. 1985). For further discussion, see generally, for example, Andrew B. Dzeguze, *The Devil in the Details: A Critique of KSR’s Unwarranted Reinterpretation of “Person Having Ordinary Skill,”* 10 COLUM.

conclusion as to obviousness “is a question of law based on underlying factual findings.”<sup>16</sup> The goal of the obviousness analysis is to determine whether a claimed invention is a sufficient advance over existing technology (rather than merely an obvious advance over existing technology) so as to warrant patent protection.<sup>17</sup>

Over a decade after the passage of the 1952 Act in which the nonobviousness requirement was codified, the Supreme Court first

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SCI. & TECH. L. REV. 1 (2009); Joseph P. Meara, *Just Who Is the Person Having Ordinary Skill in the Art? Patent Law’s Mysterious Personage*, 77 WASH. L. REV. 267 (2002).

15. See *supra* note 5. Although asking whether something “would have been” obvious, as opposed to asking whether something “is” or “was” obvious, may seem verbose, the language comes straight from § 103. *Id.* The Federal Circuit makes an effort to use that language. See *Takeda Chem. Indus., Ltd. v. Alphapharm Pty., Ltd.*, 492 F.3d 1350, 1356 n.2 (Fed. Cir. 2007) (“We note that the Supreme Court in its *KSR* opinion referred to the issue as whether claimed subject matter ‘was’ or ‘was not’ obvious. Since 35 U.S.C. § 103 uses the language ‘would have been obvious,’ and the Supreme Court in *KSR* did consider the particular time at which obviousness is determined, we consider that the Court did not in *KSR* reject the standard statutory formulation of the inquiry whether the claimed subject matter ‘would have been obvious at the time the invention was made.’ Hence, we will continue to use the statutory ‘would have been’ language.” (citation omitted)). This Article attempts to use that language throughout, though on occasion has departed for linguistic reasons. Any departures from the “would have been obvious” language are not intended to convey different meaning.

For the sake of clarity and brevity, this Article generally refers to the obviousness analysis “at the time of the invention.” In 2011, the America Invents Act (“AIA”) actually changed the time of the analysis to “the effective filing date of the claimed invention.” Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284, 287 (2011). The 2011 amendment had little or no impact in most cases because, pre-AIA, the filing date frequently was treated as the constructive invention date. Any differences between the date of the invention and the effective filing date have no impact on the issues discussed in this Article.

This Article may occasionally refer to the obviousness of a “patent” or an “invention,” but obviousness is actually determined on a claim-by-claim basis. See, e.g., *Knoll Pharm. Co., Inc. v. Teva Pharm. USA, Inc.*, 367 F.3d 1381, 1384 (Fed. Cir. 2004) (“The grant of summary judgment of invalidity for obviousness must be done on a claim by claim basis.”).

16. *Power Integrations, Inc. v. Fairchild Semiconductor Int’l, Inc.*, 711 F.3d 1348, 1355 (Fed. Cir. 2013).

17. See, e.g., *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570 (Fed. Cir. 1996) (referring to a “significant and unobvious advance over” the prior art); *Takeda Chem. Indus., Ltd. v. Mylan Labs., Inc.*, 417 F. Supp. 2d 341, 344 (S.D.N.Y. 2006) (“[The claimed invention] represented a significant advance over compounds disclosed in the prior art.”); Amicus Brief, *supra* note 4, at 3–4; Glynn S. Lunney, Jr., *E-Obviousness*, 7 MICH. TELECOMM. & TECH. L. REV. 363, 386 (2001) (“If the claimed invention contains sufficient technical advance that it would not likely have occurred but for the expectation of a patent, then the invention is nonobvious.”).

considered the language of § 103, setting forth an “objective”<sup>18</sup> framework for conducting the obviousness analysis:

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy.<sup>19</sup>

Although countless opinions have since refined and examined in detail various elements of that framework, the same essential analysis applies today.<sup>20</sup> As discussed below, it has been the subject of much criticism.<sup>21</sup>

Professor Gregory Mandel, whose scholarship on obviousness is discussed below in Part II.C, has described the obviousness analysis as follows:

The statutory nonobviousness standard thus requires an inquiry that involves several elements. The first is determining what a person of ordinary skill in the art would have already known. This (then-)current state-of-the-art presents a baseline against which to measure nonobviousness. The second is establishing the quantum of innovation beyond the baseline necessary to satisfy nonobviousness. The final element requires measuring the advance provided by the invention over prior art. Combining these three elements answers the ultimate nonobviousness question: whether the inventor’s advance over the baseline exceeds the required

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18. *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 406 (2007).

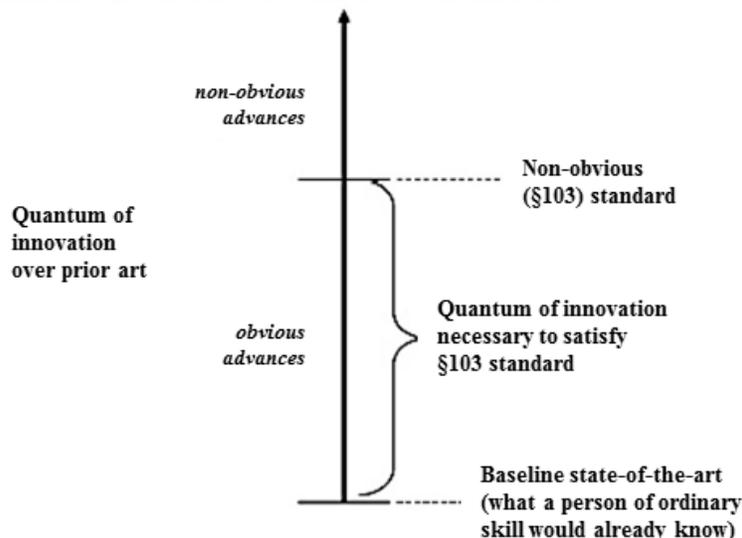
19. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966); *see also KSR*, 550 U.S. at 406.

20. *See, e.g., SSL Servs., LLC v. Citrix Sys., Inc.*, 769 F.3d 1073, 1089 (Fed. Cir. 2014) (“Obviousness is a question of law based on specific factual findings, including: (1) the scope and content of the prior art; (2) differences between the claimed invention and the prior art; (3) the level of ordinary skill in the art; and (4) any relevant secondary considerations, including commercial success, long-felt but unsolved needs, and the failure of others.”).

21. *See infra* note 129.

quantum necessary to satisfy the § 103 standard (see Figure 1).<sup>22</sup>

Figure 1. The Section 103 non-obvious standard.



Recognizing that the following description is greatly oversimplified, the obviousness analysis typically plays out in litigation in the following way: The accused infringer identifies one or more prior art references<sup>23</sup> that disclose one or more elements of the claimed invention. In the best-case scenario for the accused infringer, the references in combination reveal each and every element of the claimed invention.<sup>24</sup> Prior art references help to establish the baseline state of

22. Mandel, *supra* note 4, at 63. Figure 1 originally appeared on page 64 of Mandel's 2008 article.

23. "Prior art" can generally be understood to include any already-existing technology. References may typically include any information that was available to the public at the time of the invention, including books, patents, patent applications, journal articles, public demonstrations, speeches, presentations, products available for sale, user manuals, webpages, and more. A reference may be used to establish the obviousness of a claimed invention only if it qualifies as so-called "analogous art," i.e., art that is (1) "from the same field of endeavor," or (2) "reasonably pertinent to the particular problem with which the inventor is involved." *Innovation Toys, LLC v. MGA Entm't, Inc.*, 637 F.3d 1314, 1321 (Fed. Cir. 2011) (quoting *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004)).

24. It is also possible to establish that an invention would have been obvious even if the reference or references do not expressly teach each element of the claimed invention, so long as a PHOSITA would have been motivated to modify the teachings of the reference to achieve the claimed invention. *See, e.g., B.F. Goodrich Co. v. Aircraft Braking Sys. Corp.*, 72 F.3d 1577, 1582-83 ("When obviousness is based on a

the art; i.e., what a PHOSITA at the time of the invention would already have known.<sup>25</sup> The accused infringer then must establish that a PHOSITA, at the time of the invention, (1) would have been motivated to combine the references,<sup>26</sup> and (2) would have had a reasonable expectation that, by combining the references, he would successfully achieve the claimed invention.<sup>27</sup> To counter allegations of obviousness, the patentee frequently argues that, prior-art references notwithstanding, secondary indicia of nonobviousness (including, for example, long-felt but unmet need, failure of others, and commercial success) support the nonobviousness of the claimed invention.<sup>28</sup> The

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particular prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference.”).

If a single reference expressly teaches every element of the claimed invention, then the invention is anticipated under 35 U.S.C. § 102 (i.e., it lacks novelty), and an obviousness analysis becomes unnecessary.

25. A significant challenge in the obviousness analysis is avoiding the use of hindsight; i.e., evaluating the invention at the time that the validity challenge is brought, which is often a decade or more after the invention was conceived. *See, e.g., KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 421 (2007) (“A factfinder should be aware . . . of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning.”).

26. *See, e.g., Wyers v. Master Lock Co.*, 616 F.3d 1231, 1238–39 (Fed. Cir. 2010) (“The second question for our consideration is whether there was motivation to combine [the prior-art references].”).

27. *See, e.g., id.* at 1242 (citing *In re O’Farrell*, 853 F.2d 894, 904 (Fed. Cir. 1988) (“For obviousness under § 103, all that is required is a reasonable expectation of success.”)).

28. *See, e.g., Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Secondary considerations provide objective indications of obviousness. For example, evidence of a long-felt need for a solution to a problem may rebut obviousness because, if a need for a solution to a problem truly did exist, and the solution were obvious, then a PHOSITA would theoretically arrive at a solution quickly and the need would never become a “long-felt” need. Similarly, if others have attempted to solve a problem and failed, that may objectively indicate that the solution ultimately discovered was not obvious. “Commercial success is relevant because the law presumes an idea would successfully have been brought to market sooner, in response to market forces, had the idea been obvious to persons skilled in the art.” *Merck & Co. v. Teva Pharm. USA, Inc.*, 395 F.3d 1364, 1376 (Fed. Cir. 2005). To be relevant, “[a] nexus between the merits of the claimed invention and [the] evidence of secondary considerations is required.” *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 668 (Fed. Cir. 2000) (quoting *Simmons Fastener Corp. v. Ill. Tool Works, Inc.*, 739 F.2d 1573, 1575 (Fed. Cir. 1984)). “Put another way, commercial success or other secondary considerations may presumptively be attributed to the patented invention only where the marketed product embodies the claimed features, and is coextensive with them.” *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1328 (Fed. Cir. 2008) (quoting *Ormco Corp. v. Align Tech, Inc.*, 463 F.3d 1299, 1312 (Fed. Cir. 2006)) (internal quotation marks omitted).

Throughout this Article, the terms “secondary indicia,” “secondary considerations,” “objective indicia,” and “objective considerations” are used interchangeably.

decisionmaker then considers all of the evidence and determines whether the claimed invention was a sufficient advance over the prior art such as to warrant a finding of nonobviousness.

To give a concrete (and, again, oversimplified) example, imagine that Patentee owns a patent on an aluminum baseball bat. Patentee sues its competitor Defendant, which manufactures and sells aluminum baseball bats, for infringement of Patentee's patent. Assume that, prior to the disclosure in the patent, an aluminum baseball bat had never been publicly used or disclosed. In arguing that the patent is invalid due to obviousness, Defendant may advance three pieces of prior art: (1) a wooden baseball bat, (2) an aluminum golf club, and (3) an article from a mechanical engineering or materials science journal describing the benefits of aluminum over other materials. Patentee may submit evidence that wooden baseball bats have been used for decades, that aluminum has been known for decades, and that, despite the recurring problem of broken wooden baseball bats, nobody thought to solve the problem by creating an aluminum baseball bat prior to its invention. It may also provide evidence of commercial success, showing that, when introduced to the market, aluminum baseball bats immediately started outselling wooden baseball bats and generated substantial revenues and profits.

At trial or in a motion for summary judgment, Defendant would argue that each of the elements of Patentee's patent is disclosed in the prior art (i.e., the wooden baseball bat and the aluminum golf club) and that a PHOSITA would have been motivated to combine those two references (at least due to the journal article teaching the benefits of aluminum over other materials) to arrive at the claimed invention—an aluminum baseball bat. In other words, it would argue that an aluminum baseball bat is just the routine combination of well-known prior art elements. Patentee, in turn, would counter that the secondary considerations of nonobviousness are so compelling that they should outweigh Defendant's evidence of obviousness. The court would then consider the prior art, the level of ordinary skill in the art, and the secondary considerations and determine whether, at the time of the invention, a PHOSITA would have been motivated by the prior art to make an aluminum baseball bat.

That is the obviousness analysis in a nutshell. Only two outcomes are possible: a conclusion that the aluminum bat would not have been obvious (and therefore the patent is valid), or a conclusion that the aluminum bat would have been obvious (and therefore the patent is invalid). Innumerable judicial decisions have explored the contours of the doctrine and, as detailed below in Part II.B, many judicial decisions have acknowledged the difficulties associated with the analysis.

*B. Patent Term*

Given this Article's proposal of allowing decisionmakers to reduce patent term in certain cases, discussed in detail below in Part III, a brief discussion of patent term is warranted.

The United States Constitution allows Congress to secure "for limited Times to Authors and Inventors the exclusive Rights to their respective Writings and Discoveries."<sup>29</sup> Congress passed the first patent statute in 1790, granting a term of patent protection of fourteen years.<sup>30</sup> However, Congress "chose to act . . . on a case-by-case basis with regard to petitions for extensions or renewal of particular patents,"<sup>31</sup> thereby extending the terms of certain patents beyond fourteen years. Congress codified the requirements of applying for and receiving such extensions in 1832.<sup>32</sup> Though there were calls for patent term reform in the early 1800s,<sup>33</sup> the term remained fourteen years (with the possibility of an extension) until an 1861 amendment declared that "all patents hereinafter granted shall remain in force for a term of seventeen years from the date of issue, and all extensions of such patents is hereby prohibited."<sup>34</sup> Nearly one hundred years later, the Patent Act of 1952 maintained the seventeen-year term of patent protection.<sup>35</sup> The current term of patent protection—twenty years from the date that the application was filed<sup>36</sup>—took effect on June 8, 1995, as part of a series of statutory amendments passed in 1994 that were designed to put the United States into compliance with international treaties.<sup>37</sup>

In addition to the case-by-case patent term extensions of the eighteenth hundreds, special term extensions were passed after the World

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29. U.S. CONST. art. I, § 8, cl. 8.

30. Patent Act of 1790, ch. 7, 1 Stat. 109–10 (1790).

31. EDWARD C. WALTERSCHEID, *TO PROMOTE THE PROGRESS OF USEFUL ARTS: AMERICAN PATENT LAW AND ADMINISTRATION, 1787–1836*, at 313 (1998).

32. Act of July 3, 1832, § 2, 4 Stat. 559 (1832).

33. See Tyler T. Ochoa, *Patent and Copyright Term Extension and the Constitution: A Historical Perspective*, 49 J. COPYRIGHT SOC'Y U.S.A. 19, 51–54 (2001).

34. Act of Mar. 2, 1861, ch. 88, § 16, 12 Stat. 246, 249 (1861).

35. Patent Act of 1952, Pub. L. No. 82-593, § 154, 66 Stat. 792, 804 (1952).

36. 35 U.S.C. § 154 (2012).

37. See Uruguay Round Agreements Act, Pub. L. No. 103-465, § 532, 108 Stat. 4809, 4983–84 (1994). The agreement that mandated the change was the Agreement on Trade-Related Aspects of Intellectual Property Rights ("TRIPs"), negotiated at the end of the Uruguay Round of the General Agreement on Tariffs and Trade ("GATT") in 1994. Numerous articles provide detailed discussions of the impact of the 1994 amendments on U.S. patent law. See generally, e.g., Karen Tripp & Linda Stokley, *Changes in U.S. Patent Law Effected by the Uruguay Round Agreements Act—The GATT Implementation Legislation*, 3 TEX. INTELL. PROP. L.J. 315 (1995).

Wars “on the theory that [the service of war veterans] would have in many cases precluded them an opportunity to exploit their patents during that period.”<sup>38</sup> And in 1984, Congress passed the Drug Price Competition and Patent Term Restoration Act (the Hatch-Waxman Act), one provision of which allows for extensions of up to five years of the terms of pharmaceutical patents covering drug products subject to regulatory review.<sup>39</sup>

Patent term modification is not limited to extensions. Patent term can also be reduced from the statutory term. As part of the 1952 Act, for example, Congress codified a mechanism by which patent owners can disclaim specific patent claims (statutory disclaimers) or a portion of the remaining term of a patent (terminal disclaimers).<sup>40</sup> In describing that mechanism, the Federal Circuit has noted that “patent term [is not] an absolute, immutable statutory grant . . . patent term calculations begin but do not necessarily end with that section. Various statutory devices . . . can redefine the term of an original patent.”<sup>41</sup>

In 1980, Congress created another mechanism by which patent term may be reduced when it amended the patent laws to require patent owners to pay periodic fees in order to maintain patent term.<sup>42</sup> Under the current scheme, patent maintenance fees are required to be paid as follows: \$980, three and a half years after grant; \$2,480, seven and a half years after grant; and \$4,110, eleven and a half years after grant.<sup>43</sup> The maintenance fee statute establishes a six-month “grace period” for payment of the fees<sup>44</sup> and allows the USPTO to accept payments even beyond the grace period under certain circumstances,<sup>45</sup> but the result of a failure to pay is clear: “the patent shall expire.”<sup>46</sup> Thus, failure to pay maintenance fees triggers a statutory reduction of patent term of anywhere from about five years (if a patent owner misses the final maintenance payment) to about thirteen years (if a patent owner misses the first maintenance payment).<sup>47</sup>

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38. S. REP. NO. 81-1190 (1949), *reprinted in* 1950 U.S.C.C.A.N. 2667, 2667.

39. Drug Price Competition and Patent Restoration Act of 1984, Pub. L. No. 98-417, § 156, 98 Stat. 1585, 1598 (1984) (codified as amended at 35 U.S.C. § 156).

40. *See* Patent Act of 1952, Pub. L. No. 82-593, 66 Stat. 792 (1952) (codified as amended at 35 U.S.C. § 253).

41. *In re Yamazaki*, 702 F.3d 1327, 1332–33 (Fed. Cir. 2012).

42. Act of Dec. 12, 1980, Pub. L. No. 96-517, 94 Stat. 3015, 3017–18 (1980) (codified as amended at 35 U.S.C. § 41(b)).

43. 35 U.S.C. § 41(b)(1).

44. *Id.* § 41(b)(2).

45. *Id.* § 41(c).

46. *Id.* § 41(b)(2).

47. *See infra* note 137 (noting that an average patent provides about 17.5 years of post-grant patent protection).

Thus, U.S. patent law routinely has allowed the terms of patents to be modified, with many modifications applying only to specific patents and becoming effective during the active lifetime of those patents. Commentators and scholars likewise have proposed reforms that would result in decreased patent terms. For example, in an article describing an empirical study of the point in a patent's lifetime at which it is most likely to be asserted, Professor Brian J. Love found that a significant proportion of patent infringement suits brought by nonpracticing entities ("NPEs," frequently referred to as "trolls") are litigated "in the final three years of the patent term."<sup>48</sup> Professor Love suggested that, to reduce innovation-harming NPE litigation, "Congress should shorten the patent term by three years or even longer."<sup>49</sup>

Other scholarship considering how to maximize innovation has likewise targeted patent term as a potential area for reform. In an article discussing uniformity costs of intellectual property protection, Professor Michael W. Carroll suggests that modification of patent duration could potentially reduce uniformity cost.<sup>50</sup> Professor Eric E. Johnson has also concentrated on patent term as an area ripe for reform.<sup>51</sup> In one of his articles, he criticizes "a one-size-fits-all 20-year term of monopoly rights."<sup>52</sup> Explaining that "patents are the lifeblood of some industries . . . but are largely ineffective in other industries," he proposes that upward variances from the 20-year patent term should be allowed for certain categories of invention, and that downward variances should be permitted for other categories.<sup>53</sup>

Thus, neither the act nor the concept of modifying terms of patent protection is new. To the contrary, patent terms have been extended since the very first statute governing patent terms was in force, and they have been reduced due to disclaimer and for failure to pay

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48. Brian J. Love, *An Empirical Study of Patent Litigation Timing: Could a Patent Term Reduction Decimate Trolls Without Harming Innovators?*, 161 U. PA. L. REV. 1309, 1312 (2013).

49. *Id.* at 1313.

50. Michael W. Carroll, *One for All: The Problem of Uniformity Cost in Intellectual Property Law*, 55 AM. U. L. REV. 845, 880-85 (2006). The term "uniformity cost" refers to the social cost of imposing a "uniform solution to problems of differing magnitudes," e.g., the social costs incurred due to the uniform set of rights that each and every patent owner receives, regardless of the relative merit of the invention. *Id.* at 846-47.

51. See Eric E. Johnson, *Calibrating Patent Lifetimes*, 22 SANTA CLARA COMPUTER & HIGH TECH. L.J. 269 (2006).

52. *Id.* at 270.

53. *Id.* at 284-86 ("[T]he patent system is, at least in some circumstances, overly generous in its rewards, providing incentives beyond the inducement threshold."); *id.* at 285 ("[P]rotection should be strengthened through the lengthening of patent durations for [some] industries.").

maintenance fees for several decades. And, over the years, academics have described various different motivations for patent term reform, including patent term reduction. However, neither Congress nor the academy has ever contemplated patent term “reform” as described in this Article: that is, on a patent-by-patent basis, as part of the litigation process, grounded in the reality that the question of whether a given invention would have been obvious cannot always be answered with a simple “yes” or “no.”<sup>54</sup>

## II. ACKNOWLEDGING DEGREES OF OBVIOUSNESS

There is no question that the obviousness standard created by § 103 is binary. One of the purposes of that standard, however, is to reflect a nonbinary concept. The concept of obviousness in patent law is a measure of creativity or innovation; it is a continuum. This Article proposes that the obviousness standard should be revised to better reflect the innovation continuum. Of course, obviousness is not the only concept in the law that may unrealistically be treated as a binary.<sup>55</sup> But other areas of law frequently have policy levers to deal with the issue of artificial binaries. For example, in tort law, where a negligence determination typically results in monetary damages, juries have wide latitude to account for degrees of negligence (i.e., culpability) in determining the damages award.<sup>56</sup> The same is true of many unrealistic

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54. Some countries have so-called “second tier” patent protection, often called “utility models,” for inventions that may not be worthy of full patent protection. *See, e.g.*, Mark D. Janis, *Second Tier Patent Protection*, 40 HARV. INT’L L.J. 151, 151–53 (1999); Hans-Peter Brack, *Utility Models and Their Comparison with Patents and Implications for the US Intellectual Property Law System*, B.C. INTELL. PROP. & TECH. F. 1 (Jan. 1, 2009), <http://bciprf.org/?p=140>. Those regimes, which often lack “substantive examination” and do not extend to all patentable subject matter (e.g., second tier protection may be unavailable for methods and processes), *see* Brack, *supra*, at 2, 8–9, would not solve the problem identified in this Article. Namely, even if the United States had such a second tier regime, first tier patents would still issue and be subject to the binary obviousness analysis—with all of its flaws—that exists today. Thus, the framework proposed by this Article is fundamentally different from utility models, which do not address the problem of the nonbinary nature of the concept of obviousness.

55. *Cf., e.g.*, *Graham v. John Deere Co.*, 383 U.S. 1, 18 (1966) (“The difficulties [associated with the obviousness analysis] are comparable to those encountered daily by the courts in such frames of reference as negligence and scienter . . .”).

56. Damages are, of course, awarded in many patent infringement cases as well. But the damages in patent infringement cases directly stem from the infringement determination, not the validity determination. *See, e.g.*, 35 U.S.C. § 284 (2012) (“Upon finding for the claimant [i.e., patent owner asserting a claim of infringement,] the court shall award the claimant damages adequate to compensate for the infringement . . . .”); *cf. Beatrice Foods Co. v. New Eng. Printing & Lithographing*

binaries in civil law. By contrast, the result of an obviousness determination is all or nothing—validity or invalidity. There is no lever available to account for degrees of obviousness. Thus, the existence of unrealistic binaries in other contexts does not necessarily justify treating obviousness as a binary.

There is ample support for the notion that a binary obviousness framework is inadequate. The plain meaning of the word “obvious” itself suggests that it will not always be possible to conclude with any certainty or reliability whether a given thing is “obvious.” Every common definition of the word employs subjective terms of degree. Perhaps that is why both courts and the USPTO have repeatedly and explicitly indicated that some inventions are more obvious (or nonobvious) than others, and that it is often difficult or impossible to determine with any predictability whether a claimed invention would have been obvious at the time of the invention. Courts and judges likewise have shown implicitly that obviousness should not be considered a binary by vigorously and repeatedly disagreeing with each other as to whether a given invention would have been obvious at the time it was invented. Additionally, the obviousness analysis itself, which often invokes the maxim that objective indicia of nonobviousness “cannot overcome a *strong* prima facie case of obviousness,”<sup>57</sup> recognizes that some cases of obviousness are stronger than others. Academics and commentators have also criticized the vague nature of the obviousness analysis, with many concluding that it is subjective and unpredictable. The vast amount of criticism of and disagreement over the concept of “obviousness” points to the inadequacy of the current framework.

#### *A. The Plain Meaning of the Word “Obvious”*

The concept of obviousness has not been well defined by the courts. In fact, one scholar researched the issue and concluded, “It may be that no legal term as significant as ‘nonobviousness’ is as poorly defined.”<sup>58</sup>

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*Co.*, 923 F.2d 1576, 1579 (Fed. Cir. 1991) (“[E]nhanced damages may be awarded only as a penalty for an infringer’s increased culpability, namely willful infringement or bad faith.”).

57. *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1246 (Fed. Cir. 2010) (emphasis added) (citing *Asyst Techs., Inc. v. Emtrak, Inc.*, 544 F.3d 1310, 1316 (Fed. Cir. 2008); *Agrizap, Inc. v. Woodstream Corp.*, 520 F.3d 1337, 1344 (Fed. Cir. 2008); *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007); *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1371 (Fed. Cir. 2006)).

58. Mandel, *supra* note 4, at 88.

Lack of guidance from the courts notwithstanding, commonly used dictionaries are remarkably consistent in the way they define “obvious.” For instance, *Webster’s Unabridged Dictionary* defines “obvious” to mean “easily seen, recognized, or understood; open to view or knowledge; evident.”<sup>59</sup> The *Oxford Dictionaries* define it as “[e]asily perceived or understood; clear.”<sup>60</sup> The *Cambridge Dictionaries* define it as “easily seen, recognized, or understood.”<sup>61</sup> Scholars have used similar definitions in assessing obviousness.<sup>62</sup>

A key component of each of those definitions is the use of subjective words of degree such as “easily,” “easy,” and “clear.” Those words necessarily implicate opinion and gradation, because whether any given thing is “easy” or “easily” done or “clear” is a matter for debate, as is the *extent* to which something is “easy” or “clear,” even amongst similarly situated people. Given that the word “obvious” is defined in such terms, it is no surprise that the concept of obviousness generates significant disagreement amongst decisionmakers who have widely differing backgrounds and experiences.<sup>63</sup>

To be sure, the obviousness analysis is not conducted from the perspective of the decisionmaker; it is conducted from the perspective of a hypothetical PHOSITA.<sup>64</sup> But it is not at all difficult to imagine two people with identical backgrounds disagreeing over whether something is “easy” or “clear.” Indeed, it is not difficult to imagine a single person deeming something to be “easy” one day but considering it again days later and finding it to be not so easy, after all. Although evaluating obviousness from the perspective of a PHOSITA does standardize the analysis to some extent, it is, at best, an artificial construct designed to solve a real problem. And it is a construct applied by decisionmakers who, unlike the PHOSITA itself, are real human beings with differing backgrounds and experiences. As Professors Michael Abramowicz and John Duffy explained, “the courts have constructed [the PHOSITA] with attributes acknowledged to be highly fictional, and those fictional attributes make it difficult or impossible to

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59. RANDOM HOUSE WEBSTER’S UNABRIDGED DICTIONARY 1339 (2d ed. 2001).

60. *Obvious*, OXFORD DICTIONARIES, [http://www.oxforddictionaries.com/us/definition/american\\_english/obvious](http://www.oxforddictionaries.com/us/definition/american_english/obvious) (last visited Sept. 5, 2015).

61. *Obvious*, CAMBRIDGE DICTIONARIES ONLINE, <http://www.dictionary.cambridge.org/us/dictionary/english/obvious> (last visited Sept. 5, 2015).

62. See, e.g., Michael Abramowicz & John F. Duffy, *The Inducement Standard of Patentability*, 120 YALE L.J. 1590, 1604 (2011) (“[A] standard definition of the word [obvious] is ‘easily discovered, seen, or understood’ . . . .” (quoting WEBSTER’S NEW INTERNATIONAL DICTIONARY 1683 (2d ed. 1957))).

63. See *infra* Part II.B.

64. See *supra* note 14 and accompanying text.

gain any real intuition as to the cognitive process of the mythical PHOSITA.”<sup>65</sup>

Consequently, even when viewed from the perspective of a PHOSITA, the plain meaning of the term “obvious” inherently includes an unavoidable element of degree and subjectivity.<sup>66</sup> That plain meaning, and the problems applying it from the perspective of the mythical PHOSITA, cast doubt on whether the obviousness analysis always is amenable to only two possible outcomes. And it provides support for the notion that obviousness, at least in some instances, should be measured in terms of degree rather than with a “yes” or a “no.”

### *B. Degrees of Obviousness in the Courts and at the USPTO*

Consistent with the plain meaning of the word “obvious,” case law reflects the idea that obviousness is not a binary and should not always be treated as one. The following discussion is a small sample of cases in which a court’s decision, explicitly or implicitly, demonstrated the inadequacy of the binary framework.

The nonobviousness requirement was not codified until the 1952 Act, but it predates the Act by over one hundred years.<sup>67</sup> In *Hotchkiss v. Greenwood*,<sup>68</sup> the Supreme Court described the concept of “invention,” explaining that it requires a certain “degree of skill and ingenuity”:

[U]nless more ingenuity and skill . . . were required in [making the claimed invention] than were possessed by an ordinary mechanic acquainted with the business, there was an absence of that degree of skill and ingenuity which constitute essential elements of every invention. In other words, the improvement is the work of the skillful mechanic, not that of the inventor.<sup>69</sup>

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65. Abramowicz & Duffy, *supra* note 62, at 1604.

66. Cf. Tun-Jen Chiang, *A Cost-Benefit Approach to Patent Obviousness*, 82 ST. JOHN’S L. REV. 39, 54 (2008) (“Although § 103 purports to create an objective test by referencing a hypothetical person, the subjective opinion of a hypothetical person is still subjective.”).

67. For a brief discussion of the history of the obviousness doctrine, *see id.* at 43–56.

68. 52 U.S. (11 How.) 248 (1850).

69. *Id.* at 267.

The Court subsequently explained that § 103 was simply “a statutory expression of an additional requirement for patentability [i.e., nonobviousness], originally expressed in *Hotchkiss*.”<sup>70</sup>

Courts expressly have recognized the subjectivity and difficulty inherent in the obviousness analysis since before it was codified. In *In re Atkinson*, the Court of Customs and Patent Appeals (the C.C.P.A.)<sup>71</sup> stated: “The question as to what is or is not obvious in a patent sense is a question of opinion upon which those called upon to determine the question may differ.”<sup>72</sup> Many years later, after the passage of the 1952 Act, the C.C.P.A. addressed the question of obviousness-type double patenting.<sup>73</sup> In considering whether “any claim in the application define[s] merely an obvious variation of an invention disclosed and claimed in the [previous] patent,” the court explained:

[I]t is most difficult, if not meaningless, to try to say what is or is not an obvious variation of a claim. A claim is a group of words defining only the boundary of the patent monopoly. It may not describe any physical thing and indeed may encompass physical things not yet dreamed of. How can it be obvious or not obvious to modify a legal boundary?<sup>74</sup>

Although the C.C.P.A.’s discussion in *Vogel* focused on evaluating the obviousness of a claim in light of another *claim* in the context of obviousness-type double patenting (rather than in light of, for example, a journal article), the sentiment arguably applies equally to evaluating obviousness in light of other forms of prior art, because disclosures in prior art references are often no more detailed or concrete than disclosures in patent claims. Indeed, patents and patent claims often constitute the prior art over which an invention is analyzed for obviousness.

The C.C.P.A. is not the only court expressly to recognize the difficulty of determining whether an invention would have been obvious in light of the prior art. Shortly before the nonobviousness requirement was codified, Judge Learned Hand lamented the difficulty of answering the question “whether there is a patentable invention,” noting: “That issue is as fugitive, impalpable, wayward, and vague a phantom as

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70. See *Graham v. John Deere Co.*, 383 U.S. 1, 15 (1966) (discussing *Hotchkiss*, 52 U.S. (11 How.) 248).

71. The C.C.P.A. is often referred to as the predecessor court of the Federal Circuit. See, e.g., *In re Fisher*, 421 F.3d 1365, 1371 (Fed. Cir. 2005) (referring to the C.C.P.A. as “our predecessor court”).

72. *In re Atkinson*, 102 F.2d 882, 885 (C.C.P.A. 1939).

73. *In re Vogel*, 422 F.2d 438 (C.C.P.A. 1970).

74. *Id.* at 442.

exists in the whole paraphernalia of legal concepts.”<sup>75</sup> Shortly before the Federal Circuit was created,<sup>76</sup> the Eleventh Circuit commented that “[j]udging on appeal whether an invention is or is not an obvious development is already a difficult task.”<sup>77</sup> And in *Graham*, the Supreme Court itself acknowledged that “[w]hat is obvious is not a question upon which there is likely to be uniformity of thought in every given factual context,” and it predicted that “there will . . . be difficulties in applying the nonobviousness test.”<sup>78</sup>

Federal Circuit case law on obviousness confirms that the *Graham* Court’s prediction was accurate. In fact, shortly after it was created, the Federal Circuit discussed “the issue of patent validity,” quoting Judge Hand and agreeing that, “[i]f there be an issue more troublesome, or more apt for litigation than this, we are not aware of it.”<sup>79</sup> It is thus hardly surprising that, in countless opinions, panels of the Federal Circuit deciding issues of obviousness have vigorously disagreed.

For example, in *I/P Engine, Inc. v. AOL Inc.*,<sup>80</sup> a three-judge panel of the Federal Circuit issued three separate opinions—a per curiam majority (presumably written by Judge Wallach), a concurrence (written by Judge Mayer), and a dissent (written by Judge Chen).<sup>81</sup> At issue were patents concerning “a method for filtering Internet search results that utilizes both content-based and collaborative filtering.”<sup>82</sup> Following a twelve-day trial, a jury found that the patents were valid and infringed, rejecting the defendants’ obviousness defense.<sup>83</sup> The jury even explained its rejection of the obviousness defense in “a special verdict form on factual issues pertaining to the obviousness inquiry.”<sup>84</sup> The district court allowed the verdict to stand, denying the defendants’ motions for a new trial and for judgment as a matter of law.<sup>85</sup>

On appeal, the Federal Circuit reversed, agreeing with the defendants that the “claimed invention is obvious as a matter of law

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75. *Harries v. Air King Prods. Co.*, 183 F.2d 158, 162 (2d Cir. 1950).

76. *See supra* note 9.

77. *Mfg. Research Corp. v. Graybar Elec. Co.*, 679 F.2d 1355, 1364 n.19 (11th Cir. 1982).

78. *Graham v. John Deere Co.*, 383 U.S. 1, 18 (1966).

79. *Stevenson v. Sears, Roebuck & Co.*, 713 F.2d 705, 711 (Fed. Cir. 1983) (quoting *Technograph Printed Circuits, Ltd. v. United States*, 372 F.2d 969, 978 (Ct. Cl. 1967)).

80. 576 F. App’x 982 (Fed. Cir. 2014).

81. *Id.*

82. *Id.* at 983.

83. *Id.* at 985.

84. *Id.*

85. *Id.*

because it simply combines content-based and collaborative filtering, two information filtering methods that were well-known in the art.”<sup>86</sup> The majority concluded that “no reasonable jury could conclude otherwise.”<sup>87</sup> Although the majority acknowledged that the jury found that the prior art did not disclose all of the elements of the asserted claims,<sup>88</sup> the majority relied on “common sense” to fill in the gaps left by the prior art.<sup>89</sup> In dissent, Judge Chen criticized the majority’s ungrounded use of “common sense,” arguing that “obviousness findings grounded in ‘common sense’ must contain explicit and clear reasoning providing some rational underpinning why common sense compels a finding of obviousness.”<sup>90</sup>

Another instructive decision is *Media Technologies Licensing, LLC v. Upper Deck Co.*<sup>91</sup> That case involved patents on memorabilia cards (including sports trading cards) that “provide an actual piece or portion of an item in combination with a photograph or the like of a famous figure having a relationship to the item” (such as a cut-up piece of a baseball jersey).<sup>92</sup> After the validity of the patents was confirmed by the USPTO through reexamination,<sup>93</sup> the district court granted summary judgment of invalidity due to obviousness.<sup>94</sup>

On appeal, a split panel of the Federal Circuit affirmed. The majority affirmed the obviousness of all but one of the claims on the basis that each element of the claims was found in the prior art, while providing little or no discussion beyond that.<sup>95</sup> Acknowledging that the final claim included an element absent from the prior art, the majority essentially used a common sense analysis to affirm its obviousness. The majority relied on testimony from the defendant’s expert, who stated

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86. *Id.* at 986.

87. *Id.* Of course, a jury did in fact conclude otherwise, and both a district court judge and a Federal Circuit judge found that conclusion to be reasonable, providing some evidence that the jury was, in fact, reasonable. *Id.* at 983, 996.

88. *Id.* at 990–91 (“[T]he jury found that the prior art did not disclose all of the elements of the asserted claims . . .”).

89. *Id.* at 989–90.

90. *Id.* at 998 (Chen, J., dissenting) (quoting *Plantronics, Inc. v. Aliph, Inc.*, 724 F.3d 1343, 1354 (Fed. Cir. 2013)).

91. 596 F.3d 1334 (Fed. Cir. 2010).

92. *Id.* at 1335–36 (quoting U.S. Patent No. 5,803,501 col. 1 ll. 58–61 (filed Dec. 15, 1994)).

93. Reexamination is a process by which a third party or an inventor can have a patent reexamined by a patent examiner to determine the patentability of the claimed subject matter. *See, e.g.*, 37 C.F.R. §§ 1.902–.997 (2013) (describing *inter partes* reexamination). The reexamination procedure was replaced by *inter partes* review as part of the America Invents Act. *See* Leahy-Smith America Invents Act, Pub. L. No. 112-29, § 6, 125 Stat. 284 (2011).

94. *Media Techs.*, 596 F.3d at 1336.

95. *Id.* at 1337.

that the prior art references “could well have been sought, considered, and acted on by a person of ordinary skill in the art” to arrive at the missing claim element.<sup>96</sup> In reaching that conclusion, the majority gave little weight to secondary indicia of nonobviousness, including skepticism of experts of the claimed invention.<sup>97</sup> In dissent, Judge Rader accused the majority of “a bias against non-technical arts,” causing it to be “blind[] to the underlying facts supporting non-obviousness.”<sup>98</sup>

Though countless other Federal Circuit opinions could be used to illustrate the following concepts, *I/P Engine* and *Media Technologies* demonstrate two things. First, consistent with the plain meaning of the word “obvious,” discussed above, both decisions reveal subjectivity in the obviousness analysis. Both cases involved the use of common sense to arrive at a conclusion of invalidity due to obviousness, and in both cases the use of common sense was disputed by the dissent. As prominent IP blogger Gene Quinn noted in the wake of the *I/P Engine* decision, injecting common sense into the obviousness analysis removes the objectivity from the analysis, rendering it “subjective, non-repeatable and wholly dependent on the predisposition of the decision maker.”<sup>99</sup> To be sure, the Supreme Court affirmed the use of common sense in the obviousness analysis in *KSR International Co. v. Teleflex*,<sup>100</sup> but it simultaneously noted the “importan[ce of] identify[ing] a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.”<sup>101</sup> Likewise, the Federal Circuit requires “explicit and clear reasoning providing some rational underpinning why common sense compels a finding of obviousness.”<sup>102</sup> It is the use of common sense absent sufficiently articulated motivation that results in objectionable subjectivity, and the foregoing cases suggest that decisionmakers differ widely as to what constitutes sufficiently articulated motivation.

A second noteworthy element of *I/P Engine* and *Media Technologies* is that they pointedly reveal the depth of disagreement that obviousness cases frequently generate. In *I/P Engine*, a jury and a trial judge deemed the claims of the patents nonobvious after sitting

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96. *Id.* at 1338.

97. *Id.* at 1338–39.

98. *Id.* at 1340 (Rader, J., dissenting).

99. Gene Quinn, *Federal Circuit Ignores Jury Finding of Non-Obviousness*, IPWATCHDOG (Aug. 21, 2014), <http://www.ipwatchdog.com/2014/08/21/federal-circuit-ignores-jury-finding-of-non-obviousness/id=50839/>.

100. 550 U.S. 398, 419 (2007).

101. *Id.*

102. *Plantronics, Inc. v. Aliph, Inc.*, 724 F.3d 1343, 1355 (Fed. Cir. 2013).

through twelve days of trial.<sup>103</sup> On appeal, two judges believed the patents would have been obvious at the time of the invention, and one believed that they would not have been obvious.<sup>104</sup> Despite the fact that a jury and two of four judges who considered the patents believed the evidence to support a finding of nonobviousness, the patents were invalidated, rendering them worthless. In *Media Technologies*, the USPTO was involved through reexamination and upheld the patentability of the claims.<sup>105</sup> After consideration by a district court and the Federal Circuit, the final tally was that two decisionmakers (Judge Rader in dissent plus the patent examiner who issued the reexamination decision)<sup>106</sup> deemed the patents nonobvious, while three (the district court judge plus the Federal Circuit majority) deemed them obvious. But again, the patent was invalidated, rendering it worthless.

Of course, the mere fact that a given legal issue is difficult to decide or generates disagreement among judges does not, of itself, mean that there should be more than two possible outcomes. For example, criminal cases are often difficult to decide, but a binary outcome makes sense because, in the end, the accused either committed the crime or he did not. Guilt or innocence is a classic binary legal concept. It is a matter of fact, and it makes less sense to discuss the results of such cases in terms of degree, despite the fact that some cases are difficult to decide.<sup>107</sup> The plain meaning of the word “obvious,” however, shows that it *is* amenable to consideration in terms of degree, and that it is best understood as a subjective conclusion or observation rather than as an objective fact.

That is likely why the Federal Circuit and other courts have frequently used terms of degree in conducting obviousness analyses. For instance, the Federal Circuit often uses the terms “strong” and “weak” to describe obviousness cases,<sup>108</sup> and other courts have likewise

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103. See *I/P Engine, Inc. v. AOL Inc.*, 576 F. App'x 982, 985 (Fed. Cir. 2014).

104. See *I/P Engine*, 576 F. App'x 982.

105. *Media Techs. Licensing, LLC v. Upper Deck Co.*, 596 F.3d 1334, 1336 (Fed. Cir. 2010).

106. See U.S. Patent Reexamination No. 90/008,074 (requested July 28, 2006) (reexamining U.S. Patent No. 5,803,501 (filed Dec. 15, 1994)).

107. And, to at least some extent, sentencing variability provides a potential means of addressing culpability in criminal law.

108. E.g., *Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.*, 711 F.3d 1348, 1368 (Fed. Cir. 2013) (“The record here is replete with testimony and other evidence demonstrating that Power Integrations’ patented technology was far less obvious than Martin on its face suggests.”); *Odom v. Microsoft Corp.*, 429 F. App'x 967, 973 (Fed. Cir. 2011) (“[W]e have stated that weak secondary considerations generally do not overcome a strong prima facie case of obviousness.”); *Media Techs.*, 596 F.3d at 1339 (“[A] highly successful product alone would not overcome the strong

used words of degree in evaluating obviousness.<sup>109</sup> The use of such words of degree is a plain acknowledgement that some obviousness cases are stronger than others. But § 103 does not refer to the strength of an obviousness case; it merely states that a patent may not be obtained if “the claimed invention . . . would have been obvious.”<sup>110</sup> For a court to refer to the strength of the obviousness case implies that it is conducting some sort of subjective assessment and that cases that are “strong” enough will result in a determination of obviousness (and therefore invalidity), whereas “weaker” cases may not.<sup>111</sup>

The concept of secondary indicia of nonobviousness supports that idea. As noted above, evidence of secondary indicia frequently is described in terms of degree,<sup>112</sup> and courts evaluating secondary considerations regularly state that “secondary considerations of nonobviousness . . . cannot overcome a strong prima facie case of obviousness.”<sup>113</sup> More fundamentally, however, the very concept of secondary indicia—which are frequently referred to as “objective”

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showing of obviousness.”); *Rothman v. Target Corp.*, 556 F.3d 1310, 1322 (Fed. Cir. 2009) (“[A] strong prima facie obviousness showing may stand even in the face of considerable evidence of secondary considerations.”); *In re Peterson*, 315 F.3d 1325, 1329–30 (Fed. Cir. 2003) (“Selecting a narrow range from *within* a somewhat broader range disclosed in a prior art reference is no less obvious than identifying a range that simply overlaps a disclosed range.”); *EWP Corp. v. Reliance Universal Inc.*, 755 F.2d 898, 907 (Fed. Cir. 1985) (“Upon full consideration of all the evidence, we remain convinced that it presents a clear and very strong case of obviousness . . . .”); *In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984) (“Regardless of whether the *prima facie* [obviousness] case could have been characterized as strong or weak, the examiner must consider all of the evidence anew.”).

109. See, e.g., *Whitley v. Road Corp.*, 624 F.2d 698, 700 (5th Cir. 1980) (“The obviousness of the patent in light of the prior art is so clear from the record that we find it unnecessary to remand this case . . . .” (quoting *Waldon v. Alexander Mfg. Co.*, 423 F.2d 91, 93 (5th Cir. 1970))); *In re Corcoran*, 640 F.2d 1331, 1334 (C.C.P.A. 1981) (“[N]othing could be more obvious than [a particular element of the claimed invention].”); *In re Carlsen*, 385 F.2d 461, 464 (C.C.P.A. 1967) (“[S]uch feature is unquestionably made obvious by [the prior art].”); *In re Calderwood*, 267 F.2d 324, 325 (C.C.P.A. 1959) (“If a cap were so insubstantial as to distort under spring pressure, nothing could be more obvious than to strengthen it.”).

110. 35 U.S.C. § 103 (2012).

111. The obviousness determination may be viewed as a threshold analysis that inherently recognizes degrees of obviousness, deeming only inventions that reach a certain threshold to be obvious. That view suffers from the same problem as the obvious vs. nonobvious view: it is a binary framework with a binary outcome.

112. See *supra* note 108.

113. *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1246 (Fed. Cir. 2010); see also, e.g., *I/P Engine, Inc. v. AOL Inc.*, 576 F. App’x 982, 992 (Fed. Cir. 2014) (“[S]econdary considerations cannot overcome the strong prima facie case of obviousness.”).

indicia—implies that other elements of the obviousness analysis are not objective (or are, at least, less objective).<sup>114</sup>

Additionally, the USPTO has reviewed obviousness case law and compiled a list of “common practices which the court has held normally require only ordinary skill in the art and hence are considered routine expedients,”<sup>115</sup> i.e., inventions that likely would have been obvious. The list includes over a dozen “practices” ranging from “omission of an element and its function . . . if the function of the element is not desired” to changing the shape/size of an element to rearranging parts.<sup>116</sup> A person reading the list might reasonably conclude that inventions falling within the listed categories are typically so unusually obvious as to warrant rejection by the USPTO with little or no further consideration. The mere existence of such a list lends support to the notion that obviousness is more of a sliding scale than an absolute and that some inventions are more obvious than others—some categories being so obvious as essentially to create a presumption of obviousness based on nothing more than the nature of the invention.

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114. See *Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1324 (Fed. Cir. 2004) (referring to “secondary considerations” as “objective evidence” (quoting *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 307 (Fed. Cir. 1985))); *Arkie Lures, Inc. v. Gene Larew Tackle, Inc.*, 119 F.3d 953, 957 (Fed. Cir. 1997) (“The so-called ‘secondary considerations’ provide evidence of how the patented device is viewed by the interested public: not the inventor, but persons concerned with the product in the objective arena of the marketplace . . . . Such aspects may be highly probative of the issue of nonobviousness.”); *Para-Ordinance Mfg., Inc. v. SGS Importers Int’l, Inc.*, 73 F.3d 1085, 1088 (Fed. Cir. 1995) (“The scope and content of the prior art, differences between the prior art and the claimed invention, the level of ordinary skill in the art, and *objective evidence of secondary considerations* of patentability are fact determinations.” (emphasis added)); *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1391 (Fed. Cir. 1988) (“The rationale for giving weight to the so-called ‘secondary considerations’ is that they provide objective evidence of how the patented device is viewed in the marketplace, by those directly interested in the product.”).

115. MPEP § 2144.04 (9th ed. Mar. 2014). The Manual of Patent Examining Procedure describes itself as follows:

This Manual is published to provide U.S. Patent and Trademark Office (USPTO) patent examiners, applicants, attorneys, agents, and representatives of applicants with a reference work on the practices and procedures relative to the prosecution of patent applications before the USPTO. It contains instructions to examiners, as well as other material in the nature of information and interpretation, and outlines the current procedures which the examiners are required or authorized to follow in appropriate cases in the normal examination of a patent application. The Manual does not have the force of law or the force of the rules in Title 37 of the Code of Federal Regulations.

*Id.* at Foreword.

116. *Id.* § 2144.04.

Taken as a whole, obviousness jurisprudence is simply unconvincing on the point that obviousness is amenable to treatment as a binary. Despite the courts' best efforts to generate an objective, predictable framework for analyzing obviousness, the case law simply does not reflect much progress towards achieving that goal. To the contrary, the case law belies the position that the obviousness determination is a wholly objective one that results in an absolute determination.<sup>117</sup>

### C. Degrees of Obviousness in the Literature

Unsurprisingly, the academic literature reflects the struggles of the courts in dealing with the binary obviousness framework. This is not the first article to point out subjectivity and unpredictability in cases deciding the issue of obviousness. As described above, numerous articles are published every year in which obviousness is discussed and evaluated, with many of those articles acknowledging and criticizing the unpredictability of the obviousness analysis.<sup>118</sup> The following discussion is intended briefly to show that the academic sphere recognizes the lack of objectivity in obviousness analyses, further suggesting that the binary framework may be inadequate.

In a series of articles, Professor Gregory Mandel has evaluated the way obviousness decisions are rendered.<sup>119</sup> In a 2006 article, he describes a study in which he sought to “provide[] the first empirical demonstration of the hindsight bias in patent law.”<sup>120</sup> Professor Mandel describes the hindsight bias generally (divorced from the concept of obviousness in patent law), noting that “numerous studies have confirmed the existence of the hindsight bias as a robust and widespread cognitive limitation.”<sup>121</sup> Synthesizing the results from those studies, Professor Mandel explains:

In short, individuals are not cognitively able to prevent knowledge gained through hindsight from impacting their analysis of past events. Rather, individuals routinely overestimate the ex ante predictability of events after they have occurred. Critical for patent law, once individuals have

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117. See, e.g., Chiang, *supra* note 66, at 54 (“As a brief survey of the history of the obviousness standard shows, the problem is a lack of objective criteria to determine obviousness.”).

118. See *supra* note 11.

119. See, e.g., Mandel, *supra* note 5; Mandel, *supra* note 4.

120. Mandel, *supra* note 5, at 1393.

121. *Id.* at 1400.

hindsight information, they consistently exaggerate what could have been anticipated in foresight and not only tend to view what has occurred as having been inevitable, but also as having *appeared* relatively inevitable beforehand.<sup>122</sup>

Professor Mandel then describes the role of hindsight in patent obviousness analyses, finding that juries, judges, and PTO examiners are significantly affected by the hindsight bias in rendering obviousness decisions.<sup>123</sup> Succinctly, he concludes that, “[t]hough the nonobvious requirement sounds logical, as applied it is irrational.”<sup>124</sup>

In a subsequent article, Professor Mandel again evaluates obviousness jurisprudence, this time arguing that “[t]he nonobviousness standard . . . is indeterminate.”<sup>125</sup> He reviews significant obviousness opinions and explains that “Supreme Court and Federal Circuit precedent do not define the legal nonobviousness standard,” and he goes on to note, “It may be that no legal term as significant as ‘nonobviousness’ is as poorly defined.”<sup>126</sup> He further explains, “Because the nonobviousness standard is undefined, it is impossible for decision makers to apply the standard consistently. Simply using the term ‘non-obvious’ as a standard does not create an applicable metric; it is nothing more than a bare legal conclusion.”<sup>127</sup> Consequently, “nonobviousness determinations are highly inconsistent and unpredictable.”<sup>128</sup>

Countless academic articles and books could be cited in support of the proposition that obviousness jurisprudence is riddled with problems and unpredictability.<sup>129</sup> Many of those, including Professor Mandel’s,

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122. *Id.* at 1401–02.

123. *Id.* at 1419 (“In sum, the results of the experiment reported here and the existing empirical data indicate that non-obvious decisions, whether by judge, jury, or PTO examiner, are routinely subject to a significant hindsight bias.”); *see also* Chiang, *supra* note 66, at 55 (“With subjective judgment comes the concern that, in hindsight, everything looks obvious and insignificant. Because a subjective judgment is ultimately inscrutable, the hindsight bias cannot be isolated and removed.” (citation omitted)).

124. Mandel, *supra* note 5, at 1393.

125. Mandel, *supra* note 4, at 59.

126. *Id.* at 71, 88.

127. *Id.* at 89.

128. *Id.*

129. *See, e.g.*, Amicus Brief, *supra* note 4, at 2 (arguing that the Federal Circuit bar for nonobviousness is too low); ADAM B. JAFFEE & JOSH LERNER, INNOVATION AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT 32–35, 75, 119–23, 145–49 (2004) (positing that there are too many patents granted on obvious inventions); Robert Desmond, *Nothing Seems “Obvious” to the Court of Appeals for the Federal Circuit: The Federal Circuit, Unchecked by the Supreme Court, Transforms the Standard of Obviousness Under the Patent Law*, 26 LOY. L.A. L. REV. 455, 473–83

lend support to the notion that obviousness determinations are not always amenable to only two outcomes. In particular, Professor Mandel's 2006 article notes that hindsight may be impossible to remove from obviousness analyses, resulting in "irrational" obviousness decisions.<sup>130</sup> His 2008 article explains that the nonobviousness standard is poorly defined (if it is defined at all).<sup>131</sup> Both the use of hindsight and the lack of a clear obviousness standard point to a sliding scale of obviousness that is nearly impossible to avoid. Though not everybody will agree with Professor Mandel's ultimate conclusions,<sup>132</sup> most patent practitioners and commentators would agree that (1) hindsight often plays a role in obviousness determinations, and (2) the obviousness standard is at least somewhat amorphous and undefined.<sup>133</sup> With pervasive problems such as variable use of hindsight and indeterminate standards, it makes sense to acknowledge that it is not always possible

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(1993) (positing that the Federal Circuit law on obviousness lacks clarity and uniformity); Rochelle Cooper Dreyfuss, *The Federal Circuit: A Case Study in Specialized Courts*, 64 N.Y.U. L. REV. 1, 9–10 (1989) (concluding that the nonobviousness standard is applied inconsistently); Mandel, *supra* note 4, at 89–90 nn.143–45 (citing NAT'L RESEARCH COUNCIL OF THE NAT'L ACADS., *A PATENT SYSTEM FOR THE 21ST CENTURY* 87–95 (Stephen A. Merrill et al. eds., 2004) for the proposition that the nonobvious standard, particularly in the areas of biotech and business methods, is too lenient); Robert P. Merges, *As Many as Six Impossible Patents Before Breakfast: Property Rights for Business Concepts and Patent System Reform*, 14 BERKELEY TECH. L.J. 577, 598 (1999) ("The easiest way to raise standards [at the PTO], conceptually, is to tighten the nonobviousness requirement of section 103."); Matthew Sag & Kurt Rohde, *Patent Reform and Differential Impact*, 8 MINN. J.L. SCI. & TECH. 1, 2 (2007) ("Academics, business leaders, and government officials have all expressed concern that too many patents are issued for [obvious] inventions . . . ." (internal quotation marks omitted)); John R. Thomas, *Formalism at the Federal Circuit*, 52 AM. U. L. REV. 771, 773–74 (2003) (describing Federal Circuit nonobvious standards as too low); *see also* John H. Barton, *Non-Obviousness*, 43 IDEA 475, 496–97 (2003) (noting that too many obvious patents are being granted); Mark A. Lemley & David W. O'Brien, *Encouraging Software Reuse*, 49 STAN. L. REV. 255, 301–02 (1997) (noting that the PTO is too lenient in issuing software patents); Mandel, *supra* note 5, at 1396 n.6 (citing W. Lesser & Travis Lybbert, *Do Patents Come Too Easy?*, 44 IDEA 381, 381 (2004) (arguing that the nonobviousness standard is too low)); Carl Shapiro, *Patent System Reform: Economic Analysis and Critique*, 19 BERKELEY TECH. L.J. 1017, 1018 (2004) (noting that common complaints about the PTO include the issuance of too many obvious patents); John Thomas, *Collusion and Collective Action in the Patent System: A Proposal for Patent Bounties*, 2001 U. ILL. L. REV. 305 (discussing problems at the PTO in conducting obviousness analyses); Ashley N. Parker, Comment, *Problem Patents: Is Reexamination Truly a Viable Alternative to Litigation?*, 3 N.C. J.L. & TECH. 305, 305–07 (2002) (arguing that the PTO grants too many obvious patents).

130. *See supra* notes 119–24 and accompanying text.

131. *See* Mandel, *supra* note 4; *supra* notes 125–128 and accompanying text.

132. *See, e.g.*, Glynn S. Lunney, Jr. & Christian T. Johnson, *Not So Obvious After All: Patent Law's Nonobviousness Requirement, KSR, and the Fears of Hindsight Bias*, 47 GA. L. REV. 41 (2012).

133. *See supra* note 129.

to determine with any certainty whether or not an invention would have been obvious at the time of the invention.

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Obviousness is an all-or-nothing proposition, with a murky, indeterminate line dividing inventions that are “obvious” from those that are “nonobvious.” Yet the validity of a patent hinges on the determination. The foregoing discussion shows that problems with the obviousness analysis are widely acknowledged, both by courts and by scholars. At least some of those problems may stem from the fact that treating obviousness as a binary in every instance is simply inadequate. The subjective nature of the analysis, the problems inherent to that analysis (such as hindsight), and the plain meaning of the word “obvious,” all combine to support the conclusion that the obviousness standard of § 103 should be modified to better reflect the innovation continuum. In a purely theoretical world—one where hindsight plays no role and where the obviousness standard is well defined, among other things—it is *possible* that obviousness analyses would be amenable to only two outcomes. But reality is often different from theory, and, as the struggles of the courts and the criticisms of commentators show, surely that is the case here. Some of the problems associated with the obviousness analysis would be ameliorated if, instead of being forced to choose from a binary set of outcomes for what is a nonbinary issue, decisionmakers were permitted to determine that certain inventions would have been partially obvious at the time of the invention and consequently are entitled to partial terms of patent protection.

### III. ACCOUNTING FOR DEGREES OF OBVIOUSNESS

Having acknowledged a problem (that obviousness is not always amenable to a binary set of outcomes), the more difficult question is how to account for it.<sup>134</sup> As a first step, the solution should be congruent to the problem. Because it is not always possible to determine conclusively that an invention would or would not have been obvious at the time of the invention, and because obviousness is often more a grayscale than an absolute,<sup>135</sup> decisionmakers should not be

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134. Some may start not by asking *how* to account for it, but *whether* to account for it at all. Potential benefits accompanying a ternary obviousness framework are discussed below in Part IV.B.

135. See, e.g., *Stevenson v. Sears, Roebuck & Co.*, 713 F.2d 705, 711 (Fed. Cir. 1983) (“[That] issue is . . . as fugitive, impalpable, wayward, and vague a phantom as exists in the whole paraphernalia of legal concepts.” (quoting *Technograph*

limited to only two options in deciding obviousness cases. The available set of remedies should relate to and recognize the complexity and imprecision of the obviousness analysis. Accordingly, the decisionmaker should be permitted to determine that a given invention would have been neither plainly obvious nor plainly nonobvious at the time of the invention, but, rather, that the invention would have been partially obvious at the time of the invention. Permitting the decisionmaker to reach such a conclusion would more accurately reflect the realities of the obviousness analysis—i.e., the innovation continuum—than does the current binary framework.

The next issue is determining what the result of a “partially obvious” determination should be. Two primary options are apparent.<sup>136</sup> First, recognizing that obviousness is a grayscale with a countless number of different shades, the decisionmaker could be permitted to assign a patent term of anywhere from one year from issue date to one year *prior to* statutory expiration. Issue and expiration dates are logical benchmarks because, if the filing date (or priority date) of the patent application were used as the benchmark, some partially obvious patents could ultimately receive zero patent protection, if, for example, the decisionmaker were to assign a term that was shorter than the pendency of the patent application. Using issue and expiration dates as reference points would, in effect, permit partially obvious patents to have terms of protection ranging from one year to about sixteen years.<sup>137</sup>

A second apparent option is essentially a simplification of the first. Rather than effectively permitting patent terms of anywhere from one to sixteen years to account for varying degrees of obviousness, reform could simply allow for a single outcome for patents determined to be partially obvious: a half-term of patent protection. Again, it would

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*Printed Circuits, Ltd. v. United States*, 372 F.2d 969, 978 (Ct. Cl. 1967) (internal quotation marks omitted)).

136. Although limiting monetary damages and other options are possible, this Article focuses on reducing patent term because patent term is applicable to every issued patent. By contrast, monetary damages are not necessarily at issue in every case in which the obviousness of a patent is litigated (for instance, Hatch-Waxman cases and investigations at the International Trade Commission) and therefore could not always account for partially obvious inventions.

137. The current statutory patent term is twenty years from the filing date. 35 U.S.C. § 154(a)(2) (2012); *see also supra* Part I.B. An empirical study conducted by Professor Lemley showed that the current twenty-years-from-filing-date term is not significantly different from the old seventeen-years-from-date-of-issue term, and that “[t]he mean number of days of patent protection afforded under the [current law] is . . . 6,441 days,” or about 17.5 years. *See* Mark A. Lemley, *An Empirical Study of the Twenty-Year Patent Term*, 22 *AIPLA Q.J.* 369, 385 (1994). That number, of course, will ebb and flow with the tide of average time spent in prosecution, and it may be slightly different now than it was when Professor Lemley conducted his study.

seem most logical to calculate a half-term based on the patent's issue date, rather than defining a half-term as ten years from the filing date. Patents spend significant time pending as applications before being issued, so a term of ten years from filing date is not actually half of the patent's active lifetime—it is something substantially less.<sup>138</sup> Therefore, a half-term calculated on the basis of issue date would be a more uniform measure that would take at least some of the uncertainty of a time-consuming application process out of the equation.

The second option—a half-term of patent protection—is the more practical of the two options. As discussed above,<sup>139</sup> the obviousness analysis is difficult and imprecise as it is, even with only two possible outcomes. Permitting the decisionmaker to choose from potentially fifteen or sixteen additional outcomes (as described in the first option) would turn a subjective and unpredictable analysis into a lottery. Even though it may most accurately reflect the varying degrees of obviousness of claimed inventions, it could not be implemented in any sort of principled or repeatable manner.

The single option of allowing patent term to be halved, by contrast, would be easier to implement and would not create the administrative burden associated with more possible obviousness outcomes. More importantly, however, and as described in detail below, creating the single new option of halving patent term preserves most or all of the benefit of a more complex scheme without incurring the administrative cost and unpredictability. Presenting decisionmakers with a single new option is something that the decisionmakers could handle; presenting decisionmakers with fifteen new options is not.<sup>140</sup>

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138. Over the past decade or so, average application pendency has hovered between about 2.5 and about 3.5 years. See Dennis Crouch, *Average Patent Application Pendency*, PATENTLY-O (Dec. 12, 2011), <http://patentlyo.com/patent/2011/12/average-patent-application-pendency.html>. In the most recent year for which a Performance and Accountability Report is available from the USPTO, the length of “Patent Average Total Pendency” was 29.1 months. USPTO, PERFORMANCE AND ACCOUNTABILITY REPORT: FISCAL YEAR 2013, at 14 (2013), available at <http://www.uspto.gov/about/stratplan/ar/USPTOFY2013PAR.pdf>.

139. See *supra* Part II.

140. Ease of administration is a frequently recurring consideration in the law, though not always a dispositive one. See, e.g., *Rowan Cos. v. United States*, 452 U.S. 247, 255 (1981) (describing “congressional concern” for “the interest of simplicity and ease of administration” (citations omitted) (quoting S. REP. NO. 77-1631, at 165 (1942)) (internal quotation marks omitted)); *Texas v. New Jersey*, 379 U.S. 674, 683 (1965) (“It is fundamentally a question of ease of administration and of equity. We believe that the rule we adopt is the fairest, is easy to apply . . . .”); *Berger v. AXA Network LLC*, 459 F.3d 804, 813 (7th Cir. 2006) (describing an approach that “gives adequate, indeed great, weight to the concerns of predictability, certainty, and ease of administration” as “ha[v]ing significant merit”); *United States v. Flores*, 135 F.3d 1000, 1006 n.19 (5th Cir. 1998) (“[T]he one-year period’s comparative ease of administration, consistency,

For that reason, permitting decisionmakers to halve the term of protection for partially obvious inventions is a practical way to account for the fact that obviousness is not a binary concept.

Several questions immediately are apparent: Under what circumstances should a decisionmaker be permitted to cut patent term in half? What burden of proof should be used in determining whether to cut patent term in half? Which decisionmakers should be permitted to cut patent term in half?

#### *A. When to Cut Patent Term in Half*

The question of when to cut patent term in half has a theoretical component and a practical component. This proposal is not intended simply to give decisionmakers an option to “split the baby” in cases involving complex technology or if they are feeling lazy. To the contrary, most obviousness cases should continue to be decided as they currently are: with a determination either of obviousness or of nonobviousness.

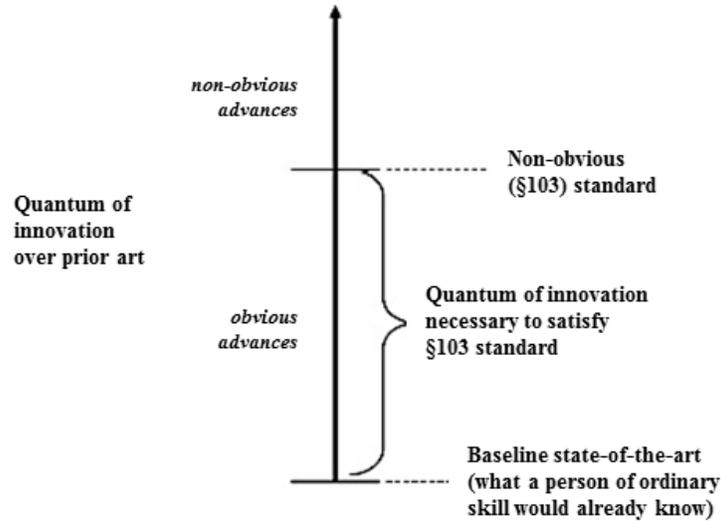
As a theoretical matter, Professor Mandel’s framing of the obviousness analysis, discussed above in Part I.A, provides a useful starting point for determining when it may be appropriate to cut patent term in half. Professor Mandel provides the following diagram of the obviousness analysis<sup>141</sup>:

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and predictability becomes decisive in its favor over a[n alternative] approach.” (quoting *Hanner v. Mississippi*, 833 F.2d 55, 58 n.6 (5th Cir. 1987)) (internal quotation marks omitted).

141. Mandel, *supra* note 4, at 64 fig.1.

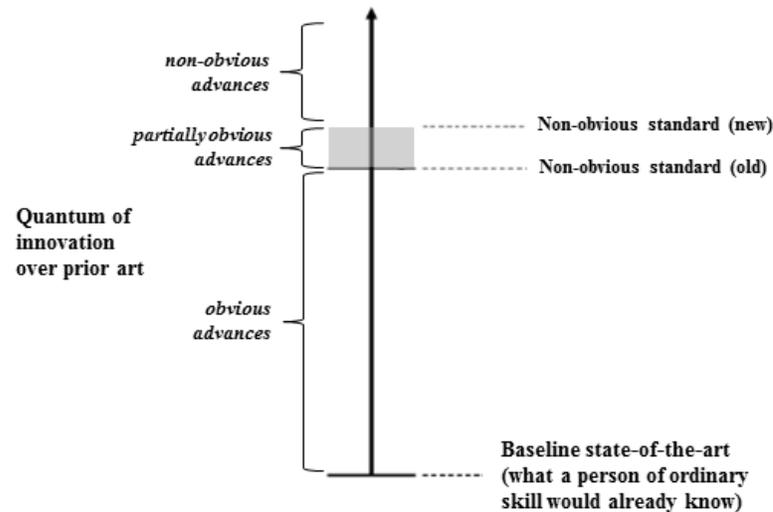
Figure 1. The Section 103 non-obvious standard.



Professor Mandel's diagram is, of course, consistent with the traditional notion that the obviousness analysis is a binary analysis. Using his framework, a claimed invention that falls above the line representing the "Non-obvious (§103) standard" would have been nonobvious and entitled to full patent protection; a claimed invention falling below that line would have been obvious and entitled to zero protection. There is no middle ground.

However, as discussed above in Part II, the realities of the obviousness analysis are often not so black and white. Professor Mandel's diagram could be modified as follows to reflect the fact that degrees of obviousness exist:

Figure 2. Nonobviousness standard reflecting degrees of obviousness



Under this framework,<sup>142</sup> there is a middle ground. Rather than having a single line separating obviousness from nonobviousness, the grey box represents partially obvious advances over the prior art; i.e., inventions so close to the line separating obvious advances from nonobvious advances that a definitive, widely-agreed-upon conclusion as to obviousness cannot reliably be reached.<sup>143</sup> Only claimed inventions falling within the grey box should be subject to being found partially obvious. To go back to Professor Mandel's more traditional diagram, the grey box should include only those inventions that are not unquestionably obvious.

The practical explanation of when to reduce patent term is a relatively simple one that, for the most part, does not differ in its application from the current obviousness analysis. The same general framework set forth by the Supreme Court in *Graham* and reaffirmed by the Court in *KSR* should apply to halving patent term.<sup>144</sup> The prior art should be considered, the secondary considerations of nonobviousness should be considered, and an assessment should be made as to whether the patent challenger has established that a PHOSITA would have been motivated, at the time of the invention, to

142. The diagram is not to scale. In other words, the relative lengths of the lines are not intended to have any significance.

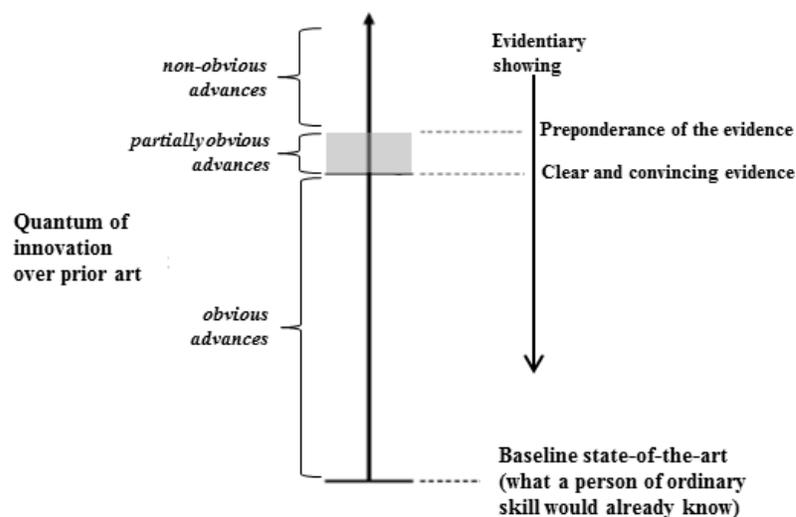
143. Cf. *In re Cox*, 73 F.2d 630, 631 (C.C.P.A. 1934) (“[T]he demarcation between what is or is not obvious is sometimes a narrow one . . .”).

144. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966); *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 399 (2007).

combine the prior art with a reasonable expectation of achieving the claimed invention.<sup>145</sup>

The significant difference between the proposed partial obviousness framework and the current binary framework comes when considering burdens of proof. In order to prevail under the current binary system, a patent challenger must prove by clear and convincing evidence that the claimed invention would have been obvious at the time of invention.<sup>146</sup> Under the proposed framework, and as explained in more detail below in Part III.B, a patent challenger should be required to prove partial obviousness by only a preponderance of the evidence. A practical explanation, then, is that patent term should be halved in cases in which the patent challenger is able to prove obviousness by a preponderance of the evidence but cannot quite achieve clear and convincing evidence:

Figure 3. Evidentiary showing required under proposed framework



Though not necessarily a perfect proxy for deciding which inventions fall into the grey box of partially obvious advances shown above in Figures 2 and 3, the difference between clear and convincing

145. See *supra* Part I.A.

146. E.g., *Microsoft Corp. v. i4i Ltd. P'ship*, 131 S. Ct. 2238, 2242 (2011) (“We consider whether [35 U.S.C.] § 282 requires an invalidity defense to be proved by clear and convincing evidence. We hold that it does.”); *Allergan, Inc. v. Sandoz, Inc.*, 726 F.3d 1286, 1291 (Fed. Cir. 2013) (“Patents are presumed valid; accordingly, [the patent challenger] was required to prove that the asserted claims were obvious by clear and convincing evidence.”).

evidence and a preponderance of the evidence can be a fine one,<sup>147</sup> just as can be the difference between an obvious and a nonobvious invention under the current binary framework. In practice, when decisionmakers are on the fence about whether or not a patent challenger has established obviousness, it is often because the evidence of obviousness is not quite as clear and convincing as it needs to be to prove obviousness.<sup>148</sup> In such cases, applying a preponderance standard for partial obviousness likely would satisfy the precise issue with which the decisionmaker is struggling: uncertainty over the obviousness outcome because of a slight failure of proof, resulting in uncertainty. And uncertainty over the obviousness outcome due to a slight failure of proof is a reasonable means of identifying the category of inventions for which a determination of partial obviousness is appropriate.

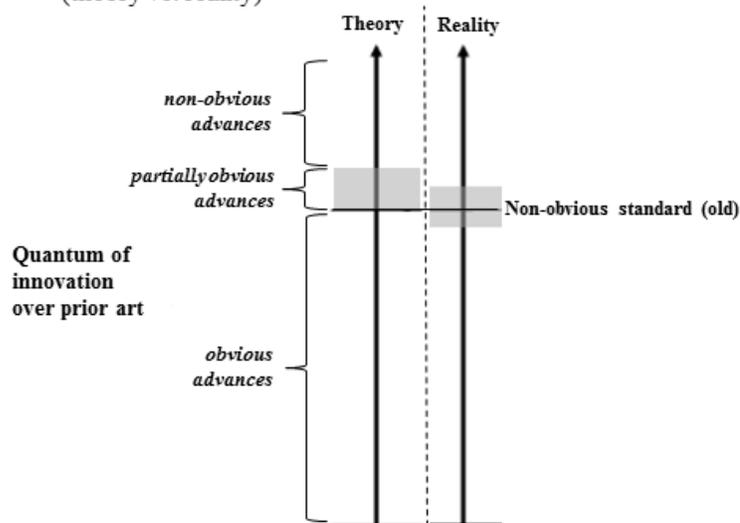
It should be recognized that, in theory, every invention that would have been obvious under the binary framework would remain obvious under the proposed ternary framework. That is because the same evidentiary showing is required to prove obviousness under both frameworks: clear and convincing evidence. Thus, only inventions falling between the “preponderance” and “clear and convincing” lines of Figure 3 should be subject to a determination of partial obviousness; i.e., only inventions that would have been nonobvious under the binary framework could be partially obvious under the proposed ternary framework. Realistically, however, it is likely that some patents would be deemed partially obvious under the ternary framework that would have been deemed fully obvious (and therefore invalid) under the binary framework. In certain circumstances, a decisionmaker who would have leaned towards a determination of obviousness under the binary framework, but with some uncertainty, may instead reach a conclusion of partial obviousness under the ternary framework. In that way, the grey box of partial obviousness may sometimes “straddle” the line representing the nonobviousness standard under the binary framework:

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147. E.g., David L. Schwartz & Christopher B. Seaman, *Standards of Proof in Civil Litigation: An Experiment from Patent Law*, 26 HARV. J.L. & TECH. 429, 438–40 (2013) (describing empirical studies and noting that judges disagree on the point at which a preponderance of the evidence switches to clear and convincing evidence).

148. Cf., e.g., *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litigation*, 676 F.3d 1063, 1083–84 (Fed. Cir. 2012) (“[Accused infringers] cannot rely on bioequivalence as the sole basis for an obviousness finding, particularly given the heavy burden of proof imposed on them in this context.”); *Neupak, Inc. v. Ideal Mfg. & Sales Corp.*, 41 F. App’x 435, 441 (Fed. Cir. 2002) (“[W]e are not prepared to overturn the district court’s ruling that [the accused infringer] failed to satisfy its heavy burden of proving, by clear and convincing evidence, that the inventions . . . would have been obvious to one of ordinary skill in the art at the time they were invented.”).

Figure 4. Nonobviousness standard reflecting degrees of obviousness (theory vs. reality)



In those instances, of course, the patentee ends up with a half-term of protection under the ternary framework, while the traditional binary framework would have resulted in invalidity. That result, while not intended, is not problematic. The motivation behind the ternary framework is not to put another arrow in the quiver of parties accused of patent infringement; it is to acknowledge and account for the fact that, realistically, obviousness is not always a binary, and that some obviousness cases are so close as to defy binary analysis.

### B. Burdens of Proof

Section 282 of Title 35 establishes that “[a] patent shall be presumed valid. . . . The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such invalidity.”<sup>149</sup> Section 282 does not, however, expressly specify the burden of proof by which a patent challenger must prove invalidity (nor does any other statute). The Federal Circuit has long required challengers to prove invalidity by clear and convincing evidence,<sup>150</sup> as did its predecessor court.<sup>151</sup> In 2011, the Supreme Court considered “whether § 282

149. 35 U.S.C. § 282(a) (2012).

150. See, e.g., *Am. Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1360 (Fed. Cir. 1984).

151. See, e.g., *Astra Sjuco, A.B. v. Int’l Trade Comm’n*, 629 F.2d 682, 688 (C.C.P.A. 1980) (“[Presumption of validity] can be overcome only by clear and

requires an invalidity defense to be proved by clear and convincing evidence.”<sup>152</sup> In holding that it does, the Court recited the presumption of validity in the opening line of the opinion and relied on it heavily throughout the opinion.<sup>153</sup> The Court concluded: “Congress specified the applicable standard of proof in 1952 when it codified the common-law presumption of patent validity. Since then, it has allowed the Federal Circuit’s correct interpretation of § 282 to stand. Any recalibration of the standard of proof remains in [Congress’s] hands.”<sup>154</sup>

Thus, there can be no question that (1) clear and convincing evidence is the burden for establishing invalidity of a patent,<sup>155</sup> and (2) the clear and convincing standard is grounded in the presumption of validity that applies to all issued patents.<sup>156</sup>

However, a determination that a claimed invention would have been partially obvious at the time of the invention does not implicate the presumption of validity in a way that should trigger the clear and convincing burden. Unlike a determination of obviousness, anticipation, indefiniteness, or any other defense that results in invalidity, a determination of partial obviousness would result only in a patent term being halved. In other words, the patent is fully valid for a half-term. Because the result of a partially obvious determination would not be invalidity, the increased burden is not triggered. No binding precedent would dictate that anything beyond the default civil standard—a preponderance of the evidence—should apply in assessing partial obviousness.<sup>157</sup>

Requiring a patent challenger to prove partial obviousness by only a preponderance of the evidence may at first seem controversial, but it is the most appropriate burden of proof. The Supreme Court has long

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convincing evidence, with the burden of persuasion remaining upon the party asserting invalidity.”).

152. *Microsoft Corp. v. i4i Ltd. P’ship*, 131 S. Ct. 2238, 2242 (2011).

153. *See id.* at 2245–49.

154. *Id.* at 2252; *see also, e.g., Sciele Pharma Inc. v. Lupin Ltd.*, 684 F.3d 1253, 1260 (Fed. Cir. 2012) (“The presumption of validity found in § 282 is reflected in the standard of proof required to prove invalidity, clear and convincing evidence.” (citing *Microsoft*, 131 S. Ct. at 2245–46)).

155. There can be no doubt about the clear and convincing evidence standard when challenging a patent’s validity in district court. In the USPTO, however, the standard may be lower. *See infra* Part III.C.

156. Over the past decade or so, there has been significant criticism of the presumption of validity and the accompanying clear and convincing standard to invalidate patents. *See infra* Part IV.B.2.

157. *See, e.g., Grogan v. Garner*, 498 U.S. 279, 286 (1991); *Herman & MacLean v. Huddleston*, 459 U.S. 375, 389–90 (1983) (explaining that, in civil cases, preponderance of the evidence is the appropriate standard unless “particularly important individual interests or rights are at stake”).

treated preponderance of the evidence as the default civil standard: “[W]e presume that [the preponderance-of-the-evidence] standard is applicable in civil cases between private litigants unless particularly important individual interests or rights are at stake.”<sup>158</sup> The same procedural rules that apply to general civil litigation also typically apply to patent cases.<sup>159</sup> Accordingly, departure from the traditional standard should occur only when warranted; for instance, when the presumption of validity applies or when particularly important individual interests or rights are at stake.

In determining partial obviousness, departure from the traditional civil standard is not justified. As described above, the presumption of validity is not under attack in partial obviousness determinations. Nor are “particularly important individual interests or rights.”<sup>160</sup> Though some may argue that patent rights, critical as they are to innovation and the development of technology, constitute “particularly important individual interests or rights,”<sup>161</sup> the Supreme Court has already foreclosed that argument. On multiple occasions the Court has explained that property rights generally do not trigger heightened civil burdens. In *Addington v. Texas*,<sup>162</sup> involuntary civil commitment was the interest at issue. In determining that the preponderance standard was insufficient, the Court noted that application of a heightened standard typically requires interests “more substantial than mere loss of money.”<sup>163</sup> It went on to note several instances in which the clear and convincing standard has been applied, including cases involving “fraud or some other quasi-criminal wrongdoing” as well as cases in which deportation and denaturalization were at issue.<sup>164</sup> No such interests are implicated in assessing the obviousness of a patent. Additionally, in *Microsoft Corp. v. i4i Ltd. Partnership*,<sup>165</sup> petitioner Microsoft argued in its brief that patent rights do not trigger a heightened civil

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158. *Grogan*, 498 U.S. at 286 (quoting *Herman*, 459 U.S. at 389) (internal quotation marks omitted).

159. *Cf.*, e.g., *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118, 132 n.11, 133 (2007) (relying on principles from non-patent cases in considering jurisdictional issue implicating patent law); *eBay Inc. v. MercExchange, LLC*, 547 U.S. 388, 390 (2006) (holding that the traditional “four-factor [injunction] test historically employed by courts of equity [also] applies to disputes arising under the Patent Act”).

160. *Grogan*, 498 U.S. at 286 (quoting *Herman*, 459 U.S. at 389) (internal quotation marks omitted).

161. *Id.* (quoting *Herman*, 459 U.S. at 389) (internal quotation marks omitted).

162. 441 U.S. 418, 419–20 (1979).

163. *Id.* at 424; *see also Santosky v. Kramer*, 455 U.S. 745, 758–59 (1982) (applying heightened burden of proof to protect interests that are “far more precious than any property right”).

164. *Addington*, 441 U.S. at 424.

165. 131 S. Ct. 2238 (2011).

standard.<sup>166</sup> The Court ignored that argument entirely in its opinion, focusing solely on the presumption of validity as the basis for the heightened standard.<sup>167</sup> There can be little doubt that, absent the presumption of validity, the default standard of preponderance of the evidence would apply to patent validity determinations. It is therefore the most appropriate standard to apply in assessing partial obviousness.

Beyond the fact that a preponderance standard is legally appropriate, it is also practically appropriate. As described above,<sup>168</sup> decisionmakers often have trouble determining whether an invention would or would not have been obvious because it is not clear whether the challenger has established obviousness by clear and convincing evidence. In other words, it's a very close case. In such cases, the availability of a slightly lower standard (preponderance) to reach a conclusion of partial obviousness is appropriate because it is precisely those cases that likely fall into the grey box of Figure 2;<sup>169</sup> i.e., those are the cases in which obviousness is not amenable to a binary set of outcomes, and it is impossible to conclude "obvious" or "nonobvious" with any certainty or conviction. In addition to being a legally appropriate standard, the standard itself provides some guidance as to the mechanics of the analysis.

There is some comfort in applying well known civil standards to new legal frameworks. It may be true that there is not necessarily a clean line dividing a preponderance of the evidence from clear and convincing evidence.<sup>170</sup> But the Supreme Court has recognized that "[p]reponderance of the evidence" and "clear and convincing evidence" describe well known, contrasting standards of proof."<sup>171</sup> Additionally, because they are standards that are entrenched in the American legal system, advocates and judges alike are familiar both with their application and with the challenges of explaining them to a jury. Accordingly, a preponderance of the evidence is the standard by which a patent challenger should be required to prove that a claimed invention is partially obvious.

### C. Decisionmakers

The validity of patents can be challenged in several different forums, including district court, the USPTO, and the International

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166. Brief of Petitioner at 14–18, *Microsoft*, 131 S. Ct. 2238 (No. 10-290).

167. See *Microsoft*, 131 S. Ct. 2238.

168. See *supra* Part III.A.

169. See *supra* Figure 2.

170. See, e.g., *supra* note 147.

171. *Allentown Mack Sales & Serv., Inc. v. NLRB*, 522 U.S. 359, 376 (1998).

Trade Commission. This Part briefly addresses whether a determination of partial obviousness should be available in all, or only some, of those forums. It also addresses appellate consideration of obviousness determinations under the proposed framework.

In district court, a challenger can allege invalidity due to obviousness either as a defense or as a counterclaim to allegations of infringement,<sup>172</sup> or as a declaratory-judgment plaintiff who has been threatened with an infringement suit.<sup>173</sup> In the ITC, the same substantive defenses—including invalidity due to obviousness—are generally available to a respondent as are available to a defendant in a district court case.<sup>174</sup> And in the USPTO, challengers have several avenues to attack the validity of patents, the most common of which is now the *inter partes* review.<sup>175</sup> In an *inter partes* review, “[a] petitioner . . . may request to cancel as unpatentable 1 or more claims of a patent only on a ground that could be raised under section 102 or 103 and only on the basis of prior art consisting of patents or printed publications.”<sup>176</sup>

District courts and the International Trade Commission should be permitted to halve patent terms by determining that an invention would have been partially obvious. District court is a forum in which all defenses to patent infringement generally are available. It is also the traditional forum for patentees to bring allegations of patent infringement; accordingly, it is the traditional forum in which accused infringers assert obviousness of the claimed invention. Because the International Trade Commission recognizes the same defenses and applies the same burdens of proof as do the courts,<sup>177</sup> determinations of partial obviousness should also be available there so as to maintain that congruence.

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172. *E.g.*, 35 U.S.C. § 282(b) (2012) (listing “[i]nvalidity of the patent or any claim in suit” as a defense to allegations of patent infringement).

173. *E.g.*, *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118 (2007) (considering when a sufficient Article III case or controversy exists for a challenger to seek a declaratory judgment that a patent is invalid).

174. *See, e.g.*, *Lannom Mfg. Co. v. U.S. Int’l Trade Comm’n*, 799 F.2d 1572, 1578 (Fed. Cir. 1986) (“[T]he Commission entertain[s] the same legal defenses to charges of infringement as do the courts.”).

175. *See, e.g.*, § 311.

176. *Id.* Because bases for invalidity are limited to § 102 and § 103, *inter partes* reviews generally involve allegations that a patented invention is either anticipated by, or would have been obvious in light of, the prior art. Other bases of invalidity, such as those found in § 112 (indefiniteness, lack of written description, etc.), are unavailable.

177. *Kinik Co. v. Int’l Trade Comm’n*, 362 F.3d 1359, 1362 (Fed. Cir. 2004) (“[T]he Commission recognizes the same defenses and applies the same burdens of proof as in the courts . . .”).

For several reasons, however, it is more difficult to justify permitting the USPTO to cut patent term in half by determining that an invention would have been partially obvious. First, patent challenges in the USPTO are evaluated by decisionmakers with technical backgrounds. Indeed, the Federal Circuit has described examiners and administrative patent judges as “persons of scientific competence in the fields in which they work . . . informed by their scientific knowledge, as to the meaning of prior art references to persons of ordinary skill in the art and the motivation to which those references would provide to such persons.”<sup>178</sup>

Second, the USPTO is, of course, the agency that originally granted and issued any patent that might be challenged. Given that the USPTO is presumed to have expertise in examining patent applications and determining obviousness *ex ante*, pre-grant, it may likewise be presumed that the USPTO can more reliably determine close cases of obviousness than can decisionmakers who lack that expertise.<sup>179</sup>

Third, patent challenges at the USPTO operate under a different burden of proof than do patent challenges in district court or at the ITC. As described above, in district court a challenger must prove obviousness by clear and convincing evidence.<sup>180</sup> The same standard applies in the International Trade Commission.<sup>181</sup> In an *inter partes* review, however, a petitioner need only prove obviousness by a preponderance of the evidence.<sup>182</sup> That is because the presumption of validity generally does not apply in USPTO proceedings.<sup>183</sup> Therefore, the USPTO does not have available to it the evidentiary distinction (clear and convincing versus preponderance) that is available to district courts and to the ITC.

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178. *In re Berg*, 320 F.3d 1310, 1315 (Fed. Cir. 2003).

179. *See, e.g., Am. Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1359 (Fed. Cir. 1984) (describing “the deference that is due to a qualified government agency presumed to have properly done its job, which includes one or more examiners who are assumed to have some expertise in interpreting the references and to be familiar from their work with the level of skill in the art and whose duty it is to issue only valid patents”).

180. *Microsoft Corp. v. i4i Ltd. P’ship*, 131 S. Ct. 2238, 2252 (2011); *supra* Part III.B.

181. *See, e.g., Kinik*, 362 F.3d at 1362; *Lannom Mfg. Co. v. U.S. Int’l Trade Comm’n*, 799 F.2d 1572, 1578 (Fed. Cir. 1986) (noting that “the Commission consistently afford[s] the patent the presumption of validity, subject to rebuttal by clear and convincing evidence”).

182. 35 U.S.C. § 316(e) (2012).

183. *See In re Etter*, 756 F.2d 852, 855–59 (Fed. Cir. 1985); *see also Ex Parte Square, Inc.*, No. 2014-00158, at 5 (P.T.A.B. May 8, 2015) (“[T]here is no presumption of validity in this proceeding . . .”).

Fourth, in an *inter partes* review, a patentee may attempt to amend his claims during the proceeding to avoid invalidity.<sup>184</sup> A patentee thus, at least in theory, has the ability to take action during the proceeding if it is concerned that the patent may be invalidated due to obviousness. Amendment of claims is not an option in district court or at the ITC.<sup>185</sup> The option for a patentee to amend the claims reduces, at least to some extent, the need for an obviousness framework that recognizes degrees of obviousness because the patentee maintains some control over the claims throughout the proceeding.

For at least those reasons, the USPTO should not be permitted to halve the terms of partially obvious patents under the proposed ternary framework.<sup>186</sup> That result may seem odd, but it is consistent with other instances of administrative remedies and procedures being different from judicial remedies and procedures. For instance, as just described, patentees may attempt to amend claims during an *inter partes* review, but amendment of claims is not possible in district court litigation or at the ITC. Additionally, under the current framework, if a challenger proves obviousness by only a preponderance of the evidence in district court, the patent remains valid and is entitled to a full term—as if the challenger never even alleged obviousness. If a challenger proves obviousness by a preponderance of the evidence in the USPTO, the patent is invalidated. That seems an unusually stark difference given that the same evidentiary showing has been made in both cases. Giving district courts and the ITC the ability to halve patent terms when a challenger proves obviousness by a preponderance of the evidence serves to reduce the stark contrast that currently exists between proving obviousness by a preponderance at the USPTO (invalidity) versus proving obviousness by a preponderance in district court or ITC litigation (validity), while still giving some meaningful weight and distinction to the presumption of validity that applies in those forums.

A final category of decisionmakers that needs consideration is appellate decisionmakers; that is, the Federal Circuit. Because appellate courts are not limited merely to affirming, reversing, or vacating

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184. See § 316(d).

185. See *In re Freeman*, 30 F.3d 1459, 1468 (Fed. Cir. 1994) (“[T]he patentee may amend the claims during reexamination and . . . such opportunity distinguishes litigation from reexamination.”).

186. And, for similar reasons, patent examiners should not be permitted to issue patents that, from day one, have only a half-term of protection. If an examiner is not convinced of the nonobviousness of a claimed invention, she can continue to reject the claims until they are amended in a way that the examiner believes renders them nonobvious. Additionally, allowing examiners to issue half-term patents likely would run afoul of TRIPs. See *infra* Part IV.A.3.

decisions of lower courts,<sup>187</sup> the addition of a third option in obviousness cases creates a potential problem for appellate panels. It is not difficult to imagine a scenario in which one judge believes an invention would have been obvious, one believes it would have been nonobvious, and one believes it would have been partially obvious. Of course, those situations are precisely the type for which a determination of partial obviousness may be appropriate—i.e., where a group of reasonable, informed decisionmakers cannot conclude by majority whether a given invention would or would not have been obvious. But, rather than conclude that a three-way split should result in a determination of partial obviousness, in such situations the conventional rule should apply: for a decision to have force, a majority of judges must agree on the remedy or disposition.<sup>188</sup> Thus, where a panel splits three ways on the issue of obviousness, the decision would be a nonprecedential affirmance of the obviousness decision below, whatever it was. In addition to aligning with tradition, treating three-way splits in that manner provides the practical benefit that the position adopted by the most judges (the trial judge plus one appellate judge) wins the day.

To summarize, district courts and the ITC—but not the USPTO—should be permitted to find that an invention would have been partially obvious at the time of invention, thereby halving patent term. On appeal, all three options—obvious, nonobvious, and partially obvious—should be available to the Federal Circuit, with a three-way split panel resulting in nonprecedential affirmance of the lower court’s obviousness determination.

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187. 28 U.S.C. § 2106 (2012) (“The Supreme Court or any other court of appellate jurisdiction may affirm, modify, vacate, set aside or reverse any judgment, decree, or order of a court lawfully brought before it for review . . .”).

188. See, e.g., Saul Levmore, *Ruling Majorities and Reasoning Pluralities*, 3 THEORETICAL INQUIRIES L. 87, 95 (2002) (“[T]he general practice is to regard such a divided vote as no decision at all . . . . There is a strong convention, indeed, perhaps a rule of law, that for a decision to have positive force, a majority of the judges must agree on the remedy or immediate disposition.”); cf. *In re Kaplan*, 789 F.2d 1574, 1578 (Fed. Cir. 1986) (describing a case in which “there was no majority opinion” and noting that “neither opinion therein, therefore, can be regarded as controlling precedent in this court”); *Costner v. A.A. Ramsey & Sons, Inc.*, 351 S.E.2d 299, 299 (N.C. 1987) (per curiam) (holding that where there was no majority of state supreme court voting to either affirm or reverse, the state’s court of appeals decision was left undisturbed but stood without precedential value, where supreme court was divided three to two as to the result, with two judges not participating).

#### IV. CHALLENGES AND BENEFITS OF A TERNARY OBVIOUSNESS FRAMEWORK

The foregoing proposal comes with both challenges and benefits, some of which have been discussed above. This Part addresses in more detail some of the challenges, and it then addresses various benefits that would accompany a ternary obviousness framework, many of which implicate recurring complaints about the U.S. patent system.

##### *A. Challenges*

Implementation of a ternary obviousness framework raises both legal and practical concerns. Legally, several sources of law might present barriers to implementation of the proposal. For example, would the U.S. Constitution permit decisionmakers to halve the terms of partially obvious patents? Does the current statutory framework permit halving patent terms? Do treaty obligations preclude decisionmakers from halving patent terms? Practically, adoption of the proposal may have consequences on innovation that would counsel in favor of maintaining the current binary obviousness framework. For example, how would a ternary obviousness framework impact research and development?

##### 1. THE U.S. CONSTITUTION

The U.S. Constitution does not preclude decisionmakers from halving patent terms due to partial obviousness. The Constitution says very little about patents or patent terms, and nothing at all about obviousness: “The Congress shall have Power . . . To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries . . . .”<sup>189</sup> Two elements of Clause 8 are potentially implicated by the proposed ternary obviousness framework.<sup>190</sup>

The duration element of Clause 8 is most directly implicated. Clause 8 states that patents may be secured “for limited Times.”<sup>191</sup> By its plain language, Clause 8 precludes patent protection of “unlimited” duration,<sup>192</sup> but it otherwise appears to provide little guidance as to the

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189. U.S. CONST. art. I, § 8, cl. 8.

190. For a more thorough discussion of Clause 8, see, for example, Carroll, *supra* note 50, at 864–71, and Ochoa, *supra* note 33.

191. U.S. CONST. art. I, § 8, cl. 8.

192. See, e.g., *Eldred v. Ashcroft*, 537 U.S. 186, 209 n.16 (2003) (“[T]he Constitution clearly precludes Congress from granting unlimited protection for copyrighted works.” (quoting S. REP. NO. 104-315, at 11 (1996)) (internal quotation

appropriate length of patent term. That task is left to Congress and is informed “by weighing the impetus provided to authors [and inventors] by longer terms against the benefit provided to the public by shorter terms.”<sup>193</sup> Although Clause 8 provides an abstract ceiling to the length of patent term (“limited Times”), it provides no clear floor. Nor does it preclude Congress from modifying the term of an existing patent.<sup>194</sup> No court has considered whether Clause 8 permits a reduction of the term of an existing patent, but nothing in the plain language of Clause 8 suggests that it does not. Moreover, Congress apparently believes that Clause 8 permits reduction of patent term, as evidenced by, for example, statutory reduction of term for failure to pay maintenance fees.<sup>195</sup>

The preamble of Clause 8 (“To promote the Progress of Science and useful Arts”) may also be implicated by the proposed ternary obviousness framework. Although it is not entirely clear whether the preamble is “hortatory or mandatory,”<sup>196</sup> either way it should not preclude patent terms from being halved due to partial obviousness. If the preamble is hortatory, then it provides no meaningful limitation on Congress’s discretion to define the term “limited Times” as it sees fit. If the preamble is mandatory, it merely requires Congress to consider whether a given modification to patent term would or would not “promote the Progress of Science and useful Arts.” Congress would have wide discretion to determine whether any given obviousness framework promotes the progress of science and the useful arts, and Congress could easily conclude that allowing decisionmakers to halve the terms of partially obvious patents does so.<sup>197</sup>

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marks omitted)); *KISS Catalog v. Passport Int’l Prods., Inc.*, 350 F. Supp. 2d 823, 833 (C.D. Cal. 2004) (perpetual term violates “limited Times” requirement); *United States v. Martignon*, 346 F. Supp. 2d 413, 424 (S.D.N.Y. 2004) (“It is clear that the ‘Limited Times’ restriction in the Copyright Clause prohibits Congress from granting Copyright protection of perpetual duration.”).

193. See *Kahle v. Gonzales*, 487 F.3d 697, 701 (9th Cir. 2007); cf. *Sony Corp. v. Universal City Studios, Inc.*, 464 U.S. 417, 429 (1984) (“As the text of the Constitution makes plain, it is Congress that has been assigned the task of defining the scope of the limited monopoly that should be granted to authors or to inventors in order to give the public appropriate access to their work product.”).

194. See, e.g., *Eldred*, 537 U.S. at 201–02 (“We count it significant that early Congresses extended the duration of numerous individual patents as well as copyrights.”); see also *supra* Part I.B (providing a brief history of patent terms in the United States).

195. See 35 U.S.C. § 41(b)(2) (2012); see also *supra* Part I.B.

196. Carroll, *supra* note 50, at 867 n.91.

197. See *id.* at 867–68 (“Congress undoubtedly will have wide discretion to define progress and to determine whether a particular legislative measure promotes it . . . .”); cf. *Eldred*, 537 U.S. at 213 (the Supreme Court “defer[s] substantially to

Thus, the Constitution is not a barrier to an obviousness framework that permits decisionmakers to halve the terms of partially obvious patents.

## 2. THE CURRENT STATUTORY PROVISION

Section 103 would need to be modified in order to permit decisionmakers to determine that a claimed invention would have been partially obvious at the time of the invention. As described above, the Constitution says nothing about obviousness, and it certainly does not mandate a binary obviousness framework in which every patented invention would either have been obvious or nonobvious at the time of the invention. But that is the scheme that presently exists (and has existed historically in the United States), as reflected by both the statute itself and the case law interpreting the statute.<sup>198</sup> In its entirety, the current version of 35 U.S.C. § 103 reads:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.<sup>199</sup>

Section 103 provides only that a patent may or “may not be obtained,” and it contemplates only inventions that would or would not “have been obvious.”<sup>200</sup> It does not consider, much less recognize or attempt to

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Congress” concerning its “exercise of . . . legislative authority conferred by the Copyright Clause”).

198. See § 103; see also, e.g., *WMS Gaming, Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1355 (Fed. Cir. 1999) (“The ultimate determination of whether an invention is or is not obvious is a legal conclusion . . .”); *Tapco Int'l Corp. v. Van Mark Prods. Corp.*, 18 F. App'x 865, 870 (Fed. Cir. 2001); *In re Petering*, 301 F.2d 676, 682 (C.C.P.A. 1962) (“It is our opinion, however, that Congress did not contemplate various *degrees* of obviousness in section 103.”); *In re Cox*, 73 F.2d 630, 631 (C.C.P.A. 1934) (“[T]he demarcation between what is or is not obvious is sometimes a narrow one . . .”).

199. § 103.

200. *Id.*; *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986) (“The important consideration is the need to adhere to the statute, *i.e.*, to hold that an invention would or would not have been obvious . . .”). The original version of § 103 passed in 1952 was not materially different. See Patent Act of 1952, Pub. L. No. 82-593, § 103, 66 Stat. 792, 798 (1952) (“A patent may not be

account for, the possibility that “obvious” is a term of degree that is not always amenable to a binary set of conclusions.

A modification of § 103 would not need to be particularly complex or detailed in order to permit decisionmakers to halve the terms of partially obvious patents in the manner described above in Part III. One potential way to modify existing § 103 is as follows (amendment underlined):

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. A patent for a claimed invention that, as a whole, would have been partially obvious before the effective filing date of the claimed invention, shall be entitled to a half-term of protection calculated from the issue date of the patent. Patentability shall not be negated by the manner in which the invention was made.

Although the added “partially obvious” provision does not provide much detail as to the mechanics of determining whether a given invention would have been partially obvious, it is no more or less detailed than the current § 103, and it would enable the courts, assisted by the patent bar, to develop the contours of partial obviousness, just as the courts developed the contours of the obviousness doctrine itself.

Though statutory amendment is a significant measure that is no doubt difficult to achieve, the proposed modification is actually far simpler than some patent reform proposals that have achieved some level of attention from lawmakers. For example, in 2005, Professors Mark Lemley, Doug Lichtman, and Bhaven Sampat proposed the idea of “gold-plating” patents.<sup>201</sup> Their proposal involved three parts, each of which likely would require statutory amendment: (1) weaken or eliminate the presumption of validity for issued patents, (2) create a new patent examination scheme under which applicants may pay for more thorough examination of their applications, resulting in “gold-plated” patents that are entitled to a presumption of validity when

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obtained [if] the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art . . .”).

201. Mark Lemley et al., *What to Do about Bad Patents?*, REGULATION, Winter 2005, at 10, 12; see also Doug Lichtman & Mark A. Lemley, *Rethinking Patent Law's Presumption of Validity*, 60 STAN. L. REV. 45, 61–63 (2007).

issued, and (3) create a system by which patents that have survived adversarial validity determinations receive substantial deference in future validity challenges.<sup>202</sup> Despite having several moving parts and requiring an entirely new patent examination system, the proposal received serious attention from politicians (though ultimately was not adopted).<sup>203</sup>

Statutory amendment—though inevitably a hurdle—is not an insurmountable barrier to the ternary obviousness framework proposed in this Article.

### 3. INTERNATIONAL TREATIES

In 1994, Congress passed statutory amendments to put U.S. patent law into compliance with the Agreement on Trade-Related Aspects of Intellectual Property Rights (“TRIPs”), negotiated at the end of the Uruguay Round of the General Agreement on Tariffs and Trade (“GATT”) in 1994.<sup>204</sup> Article 33 of TRIPs states: “The term of [patent] protection available shall not end before the expiration of a period of twenty years counted from the filing date.”<sup>205</sup> As briefly described above, Article 33 is responsible for the twenty-years-from-filing-date term of patent protection embodied in 35 U.S.C. § 154.<sup>206</sup>

Though allowing decisionmakers to halve the terms of partially obvious patents may, at first glance, seem to be at odds with Article 33 of TRIPs, arguably it is not. Article 27 of TRIPs states that patents shall be available only for inventions involving, *inter alia*, “an inventive step.”<sup>207</sup> TRIPs expressly deems the term “inventive step” “to be synonymous with the term[] non-obvious.”<sup>208</sup> As set forth above, the proposed ternary obviousness framework would not change the term of nonobvious inventions.<sup>209</sup> It would change the term only of partially

202. See Lemley et al., *supra* note 201, at 12–13; Lichtman & Lemley, *supra* note 201, at 59–65.

203. See OBAMA FOR AM., BARACK OBAMA: CONNECTING AND EMPOWERING ALL AMERICANS THROUGH TECHNOLOGY AND INNOVATION (2007), available at [http://patentlyo.com/media/docs/2007/11/fact\\_sheet\\_innovation\\_and\\_technology\\_plan\\_final.pdf](http://patentlyo.com/media/docs/2007/11/fact_sheet_innovation_and_technology_plan_final.pdf); see also Lawrence B. Ebert, *On Gold-Plating Patents*, INTELL. PROP. TODAY, <http://www.iptoday.com/articles/2008-11-ebert.asp> (last visited Sept. 29, 2015).

204. See Uruguay Round Agreements Act, Pub. L. No. 103-465, § 532, 108 Stat. 4809, 4983 (1994); see also *supra* Part I.B and note 37.

205. Agreement on Trade Related Aspects of Intellectual Property Rights, Including Trade in Counterfeit Goods of the General Agreement on Tariffs and Trade, Dec. 15, 1993, 33 I.L.M. 81, 86 [hereinafter Agreement on TRIPs].

206. See 35 U.S.C. § 154(b) (2012); *supra* Part I.B.

207. Agreement on TRIPs, *supra* note 205, at 93–94.

208. *Id.* at 94 n.5.

209. See *supra* Part III.

obvious inventions. In the language of TRIPs, the term of a patent would be halved only in cases in which the claimed invention does not clearly meet the “inventive step” requirement of Article 27. In essence, the ternary obvious framework creates a new category of obviousness—partial obviousness—on which TRIPs is silent, mandating no particular patent term.

Additionally, TRIPs describes patent term as a length of time that is “available.”<sup>210</sup> Under the proposed ternary obviousness framework, all patents would issue with a twenty-years-from-filing-date term of patent protection and therefore be fully compliant with Article 33 of TRIPs. In other words, all patents have the full term “available” to them when they issue. TRIPs also states that the available term “shall not end before the expiration of a period of twenty years counted from the filing date.”<sup>211</sup> Despite the appearance of the plain language, that phrase cannot mean that all patents issued by member countries must be effective for the full term. TRIPs, of course, does not preclude member countries from revoking the term of an issued patent, for example, that is subsequently determined to be invalid.<sup>212</sup> Nor does TRIPs preclude member countries from reducing patent term for failure to pay maintenance fees.<sup>213</sup> Thus, though potentially susceptible to different interpretations, Article 33 should be read to mean, at most, only that patents must *issue* with a full twenty-years-from-filing-date term available to them; not that every issued patent is *irrevocably* entitled to that full term. TRIPs permits departures from full term in appropriate circumstances.

Even if the proposed ternary obviousness framework were incompatible with TRIPs as it currently is written, it may not matter. If the major trading partners of the United States viewed the ternary obviousness framework as favorable to them, it would likely go unchallenged or result in limited sanctions.<sup>214</sup> Academics have studied

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210. Agreement on TRIPs, *supra* note 205, at 96.

211. *Id.*

212. *See, e.g., id.* (“An opportunity for judicial review of any decision to revoke or forfeit a patent shall be available.”).

213. *Id.* at 106 (“Members may require, as a condition of the acquisition or maintenance of the intellectual property rights provided for under Sections 2-6 of Part II of this Agreement, compliance with reasonable procedures and formalities.”); *see also* Paris Convention for the Protection of Industrial Property art. 5bis, *as revised* July 14, 1967, 21 U.S.T. 1583 (“A period of grace of not less than six months shall be allowed for the payment of the fees prescribed for the maintenance of industrial property rights . . .”).

214. *Cf.* Walter G. Park, *Patent Systems in APEC: Role in Nontariff Trade Barriers and Strategic Trade Policies*, in *THE ECONOMIC IMPLICATIONS OF LIBERALIZING APEC TARIFF AND NONTARIFF BARRIERS TO TRADE* 6-1, 6-2 (U.S. Int’l Trade Comm’n 1998) (noting that the strategic use of patent laws by domestic firms

the issue and concluded that, “[a]s a practical matter . . . member nations including the U.S. violate various aspects of the TRIPS agreement quite often without ramification.”<sup>215</sup> Here, it is reasonable to think that member nations might view the ternary obviousness framework as favorable to them because foreign firms typically hold fewer U.S. patents than domestic firms.<sup>216</sup> In addition to holding fewer U.S. patents, foreign firms enforce them less frequently, and they are less likely to prevail when they do enforce them.<sup>217</sup> Thus, member nations may view the ternary obviousness framework as potentially benefiting them (as accused infringers) more often than potentially harming them (as patentees).

Accordingly, though TRIPS requires thoughtful consideration in the implementation of any amendment to patent law that may affect patent term, the ternary obviousness framework is not inconsistent with TRIPS and, to the extent that it is, may nevertheless be embraced by foreign trading partners.

#### 4. PRACTICAL CONCERNS

In addition to legal concerns, the proposed ternary obviousness framework presents practical concerns about what impact it may have on innovation and the established expectations of industry. Any amendment to patent law necessarily garners the attention of countless technology companies. Rightfully so, as patent protection is “the lifeblood of some industries.”<sup>218</sup> However, it is difficult to predict with any certainty the impact that any given amendment will have on the

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often creates substantial trade barriers for foreign firms); Benjamin N. Roin, *The Case for Tailoring Patent Awards Based on Time-to-Market*, 61 UCLA L. REV. 672, 706 n.155 (2014) (“This TRIPS violation might not matter, however, if the United States were to implement a well-designed tailoring regime that weakens patent protection in industries in which strong patent rights are currently stifling overall innovation. Tailoring of this sort would likely benefit most or all of the United States’ major trading partners.”).

215. See Love, *supra* note 48, at 1357 n.184 (citing Colleen V. Chien, *Tailoring the Patent System to Work for Software and Technology Patents* 1 (Nov. 15, 2012) (unpublished manuscript), <http://ssrn.com/abstract=2176520> (“The open secret among international law scholars is that despite TRIPS’ broad pronouncements, the treaty actually contains many flexibilities and exceptions.”)).

216. Gaëtan de Rassenfosse et al., *The Worldwide Count of Priority Patents: A New Indicator of Inventive Activity*, 42 RES. POL’Y 720, 720, 725 (2013) (noting that foreign firms typically hold fewer U.S. patents than domestic firms).

217. Kimberly A. Moore, *Xenophobia in American Courts*, 97 NW. U. L. REV. 1497, 1504 (2003).

218. Johnson, *supra* note 51, at 285.

courts, much less the impact it will have on technology companies.<sup>219</sup> Commentators could not even agree on how the patent term amendments of 1994<sup>220</sup> would impact innovation.<sup>221</sup> Therefore, this Article will not attempt to make such a prediction. Rather, it will briefly address some considerations that would bear on the impact the proposed ternary obviousness framework would have on innovation.

First, it is important to note that the proposed ternary obviousness framework does not benefit only companies that do not hold patents of their own. Many of the largest technology companies in the world own countless patents,<sup>222</sup> but they typically get sued for patent infringement more often than they sue others. For example, Hewlett-Packard and Apple each had 131 patent lawsuits filed against them between 2007 and 2011 by nonpracticing entities alone.<sup>223</sup> Docket Navigator analytics suggests that Apple was a defendant in patent lawsuits approximately five times more often than it was a plaintiff in calendar year 2010.<sup>224</sup>

Additionally, the proposed ternary obviousness framework may actually *benefit* patentees in certain cases. As described above in Part III.A, decisionmakers would inevitably, on occasion, reach conclusions of partial obviousness under the ternary framework where they would have reached conclusions of obviousness under the binary framework. In those instances, of course, the patentee ends up with a half-term of protection under the ternary framework, while the traditional binary framework would have resulted in invalidity. But that result is not problematic—the purpose of this proposal is to better align the obviousness framework with the innovation continuum, thereby ameliorating some of the pervasive problems with the binary

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219. Cf., e.g., Jason Rantanen, *The Federal Circuit's New Obviousness Jurisprudence: An Empirical Study*, 16 STAN. TECH. L. REV. 709, 710–11 (2013) (describing the competing views of two prominent law professors as to whether and how *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007), would change the Federal Circuit's obviousness jurisprudence).

220. See *supra* Part I.B.

221. See Lemley, *supra* note 137, at 376, 381–82 (describing competing views on the amendments as well as differing predictions as to whether the amendments would increase or decrease the average term of patent protection).

222. See, e.g., Dylan McGrath, *Report Details Apple's Patent Holdings*, ELECTRONIC ENGINEERING TIMES (Feb. 29, 2012), [http://www.eetimes.com/document.asp?doc\\_id=1261292](http://www.eetimes.com/document.asp?doc_id=1261292) (reporting that Apple owns roughly 8500 U.S. patents); Antonio Regalado, *Google's Growing Patent Stockpile*, TECH. REV. (Nov. 29, 2013), <http://www.technologyreview.com/news/521946/googles-growing-patent-stockpile/> (showing that several technology companies, including Google, Apple, IBM, Microsoft, and Intel, are awarded more than 1000 U.S. patents per year).

223. See Neil Hughes, *Apple Faces More Patent 'Troll' Suits Than Any Other Tech Company*, APPLE INSIDER (Apr. 13, 2012), [http://appleinsider.com/articles/12/04/13/apple\\_faces\\_more\\_patent\\_troll\\_suits\\_than\\_any\\_other\\_any\\_tech\\_company](http://appleinsider.com/articles/12/04/13/apple_faces_more_patent_troll_suits_than_any_other_any_tech_company).

224. DOCKET NAVIGATOR, <http://www.docketnavigator.com>.

obviousness analysis; the purpose is not to give accused infringers new defenses.<sup>225</sup>

Finally, as described above, under the proposed obviousness framework, all patents would issue with the expectation of a full term; only litigated patents would even be subject to term reduction due to partial obviousness.<sup>226</sup> Studies have shown that “only 1.5 percent of patents are ever litigated, and only 0.1 percent of patents are ever litigated to trial.”<sup>227</sup> Accordingly, only a small fraction of issued patents would even be subject to the possibility of term reduction due to being partially obvious.

For at least those reasons, there is no immediate reason to believe that a ternary obviousness framework would have a disproportionately negative effect on technology innovators.

### *B. Practical Benefits*

The following discussion highlights certain practical benefits that would accompany the proposed ternary obviousness framework, some of which implicate issues in patent law that have received significant scrutiny in recent years.

Importantly, and as briefly noted above,<sup>228</sup> the impetus for a ternary obviousness framework is not the practical benefits that may accompany it. The impetus is a desire for the legal doctrine of obviousness to reflect the realities of the innovation continuum, thereby potentially mitigating unpredictability and irrationality<sup>229</sup> in obviousness decisions. As set forth above in Part II, the binary framework created by the current doctrine is artificial and does not reflect reality, which may contribute to the struggles that the courts have had in applying the doctrine. Additionally, implementing an obviousness standard that better reflects the innovation continuum has the potential to increase the efficiency of the patent system by creating a link between the reward (patent term) and the quantum of innovation revealed by the patent disclosure for litigated patents. Although the benefits described below may be an added bonus, they are not the primary motivation for reform.

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225. See *supra* Parts II, III.A.

226. See *supra* Part IV.A.3; see also *supra* note 186.

227. Mark A. Lemley & Carl Shapiro, *Probabilistic Patents*, 19 J. ECON. PERSP. 75, 75 (2005).

228. See *supra* Parts III.A, IV.A.4.

229. See *supra* note 129.

1. NONPRACTICING ENTITIES<sup>230</sup>

For at least a decade, corporations have sought patent reform to address the issue of nonpracticing entities (“NPE”), so-called “patent trolls.”<sup>231</sup> Although “a widely accepted definition of patent troll has yet to be devised,”<sup>232</sup> patent trolls or NPEs generally include at least companies that exist for the sole or primary purpose of generating revenue by enforcing a patent portfolio.<sup>233</sup> In recent years, the impact of NPEs has grown,<sup>234</sup> resulting in ever-increasing attention from both commentators and lawmakers.<sup>235</sup> In 2013 and 2014 alone, at least fourteen bills were introduced in Congress “to deal with some aspect of

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230. The purpose of this Part is not to take a position on whether NPEs are harmful or beneficial to innovation in the United States, but simply to recognize the potential impact of the proposed obviousness framework on NPEs.

231. See *Patent Quality Improvement: Hearings Before the Subcomm. on Courts, the Internet, & Intellectual Prop. of the H. Comm. on the Judiciary*, 108th Cong. 21 (2003) [hereinafter *Patent Quality Improvement Hearings*] (testimony of David Simon, Chief Patent Counsel, Intel Corp.). NPEs are also sometimes called patent assertion entities or patent holding companies. See Christopher A. Cotropia et al., *Unpacking Patent Assertion Entities (PAEs)*, 99 MINN. L. REV. 649, 650 (2014); Eugene Prokopenko, *Can Forming a Patent Holding Company Turn Your Client Into a Patent Troll?*, FOR REC. (July 2015), <https://www.sdcba.org/index.cfm?pg=FTR-Jul-2015-6>.

232. John M. Golden, “*Patent Trolls*” and *Patent Remedies*, 85 TEX. L. REV. 2111, 2112 n.7 (2007); see also David L. Schwartz & Jay P. Kesan, *Analyzing the Role of Non-Practicing Entities in the Patent System*, 99 CORNELL L. REV. 425, 429 (2014) (“[T]here is no uniformly accepted definition of who is an NPE or patent troll.”).

233. Cf. Golden, *supra* note 232, at 2114 (defining “noncompeting patent holders” as “patent holders who neither compete with an infringer nor exclusively license to someone who does”); Schwartz & Kesan, *supra* note 232, at 429 (“Some entities clearly fall within the definition of an NPE: for instance, a shell company unrelated to the original inventors that purchases a patent for the sole purpose of enforcement.”).

234. See, e.g., Love, *supra* note 48, at 1310 (“The impact nonpracticing entities (NPEs), or ‘patent trolls,’ have on innovation may be the most important empirical question in patent law today.”).

235. See, e.g., Colleen V. Chien, *Of Trolls, Davids, Goliaths, and Kings: Narratives and Evidence in the Litigation of High-Tech Patents*, 87 N.C. L. REV. 1571, 1603 (2009) (noting that over 19% of patent lawsuits filed between 2000 and 2008 involving “high tech” patents were filed by non-practicing entities); Golden, *supra* note 232, at 2114; Mark A. Lemley, *Are Universities Patent Trolls?*, 18 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 611, 612 (2008) (arguing that universities should not be deemed trolls); Love, *supra* note 48; Michael Risch, *Patent Troll Myths*, 42 SETON HALL L. REV. 457, 458 (2012); Schwartz & Kesan, *supra* note 232, at 426; Joe Mullin, *How the Patent Trolls Won in Congress*, ARSTECHNICA (May 23, 2014), <http://arstechnica.com/tech-policy/2014/05/how-the-patent-trolls-won-in-congress/> (describing Congressional consideration of issues relating to patent trolls); Joe Mullin, *It’s Victory Day for Patent Trolls as Key Senator Gives up on Reform*, ARSTECHNICA (May 21, 2014), <http://arstechnica.com/tech-policy/2014/05/gridlock-strikes-again-anti-patent-troll-bill-dies-in-us-senate/>.

the patent troll issue.”<sup>236</sup> Several bills have been introduced in 2015, as well.<sup>237</sup> Recurring ideas for reform have included, *inter alia*, (1) raising pleading standards in patent cases, (2) creating a presumption of fee shifting in patent cases, and (3) limiting pre-claim construction discovery.<sup>238</sup>

Allowing decisionmakers to halve the terms of partially obvious patents would likely have a significant impact on patent litigation brought by NPEs. Professor Love studied the timing of patent infringement suits brought by NPEs and found that a significant proportion of those suits are litigated “in the final three years of the patent term.”<sup>239</sup> Professor Love suggested that, to reduce NPE litigation, “Congress should shorten the patent term by three years or even longer.”<sup>240</sup> The proposed ternary obviousness framework would result in the term of partially obvious patents being reduced, on average, by nearly nine years.<sup>241</sup> Accordingly, if an NPE were to file suit in the final three years of a patent’s term (as they frequently do), and the decisionmaker were to deem the patent partially obvious and infringed, the NPE would be entitled to zero (or very close to zero) damages due to the six-year statute of limitations on patent damages.<sup>242</sup> In his article, Professor Love recognizes that NPEs might simply “adjust their litigation timing in response to a term reduction.”<sup>243</sup> Although he suggests that many or most NPEs would not be able to

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236. *Patent Progress’s Guide to Federal Patent Reform Legislation*, PAT. PROGRESS, <http://www.patentprogress.org/patent-progress-legislation-guides/patent-progress-guide-patent-reform-legislation/> (last visited Aug. 28, 2015).

237. *Id.*

238. *See, e.g., id.*; *see also* Innovation Act of 2014, H.R. 3309, 113th Cong. (2013).

239. *See* Love, *supra* note 48, at 1312.

240. *Id.* at 1313.

241. *See supra* note 137 (average term of post-grant patent protection is approximately 17.5 years).

242. *See* 35 U.S.C. § 286 (2012) (“Except as otherwise provided by law, no recovery shall be had for any infringement committed more than six years prior to the filing of the complaint or counterclaim for infringement in the action.”). If the suit were brought with three years of term remaining, reducing patent term by nine years would wipe out the entire six year pre-suit period for which damages could be collected. Any suit brought with fewer than three years of term remaining would be even less likely to result in damages if the patent were found to be partially obvious. Suits brought with more than three years of term remaining may still result in damages, but the damages may be significantly reduced by the term reduction due to partial obviousness.

243. *See* Love, *supra* note 48, at 1353 (“One thing this study cannot predict, however, is how patentees would adjust their litigation timing in response to a term reduction.”).

significantly accelerate their suits for various reasons,<sup>244</sup> even if they could, halving the term of partially obvious patents would significantly reduce the amount of the six-year damages period available to NPEs.

Thus, where the suit is filed sufficiently late in the patent's term (as is often the case in NPE litigation), the proposed ternary obviousness framework essentially provides a complete defense to allegations of infringement—a complete defense that needs to be proved by only a preponderance of the evidence, rather than by clear and convincing evidence. The availability of a lower burden of proof for what is effectively a complete defense to infringement may significantly reduce the leverage of NPEs in patent litigation.

The same is true of litigation brought by practicing entities, of course. But Professor Love found that “[p]roduct-producing companies predominantly enforce their patents soon after they issue and complete their enforcement activities well before their patents expire.”<sup>245</sup> In any event, partially obvious patents should be entitled to a half-term regardless of whether owned by a practicing entity or a nonpracticing entity. The fact that, in some cases, a finding of partial obviousness will function as a complete bar to recovery of damages is a necessary and appropriate consequence of the proposed framework. The fact that it may disproportionately affect NPEs may be viewed by some as a benefit.

## 2. THE PRESUMPTION OF VALIDITY & CLEAR AND CONVINCING EVIDENCE

Section 282 of Title 35 establishes that “[a] patent shall be presumed valid.”<sup>246</sup> That presumption was codified as part of the 1952 Act,<sup>247</sup> but it has been recognized by the courts since long before it was codified.<sup>248</sup> For many decades, the presumption operated without much

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244. *See id.* (“NPEs cannot file suit before targeted products hit the market and generally will not do so before those products go on to become popular with consumers. Thus, because the lifecycles of very few high-tech products exceed three years, as a practical matter very few NPE claims can be expedited beyond three years.”).

245. *Id.* at 1312.

246. § 282(a).

247. Patent Act of 1952, Pub. L. No. 82-593, 66 Stat. 792 (1952).

248. *See, e.g., Radio Corp. v. Radio Eng'g Labs., Inc.*, 293 U.S. 1, 7 (1934) (“A patent regularly issued, and even more obviously a patent issued after a hearing of all the rival claimants, is presumed to be valid until the presumption has been overcome by convincing evidence of error.”); *see also Microsoft Corp. v. i4i Ltd. P'ship*, 131 S. Ct. 2238, 2246 (2011) (“Thus, by the time Congress enacted § 282 and declared that a patent is ‘presumed valid,’ the presumption of patent validity had long been a fixture of the common law.”).

controversy or attention. However, around the same time that NPEs began to receive significant attention, so did the presumption. In 2003, a report by the Federal Trade Commission addressed the presumption.<sup>249</sup> Although the FTC report did not go so far as to recommend eliminating the presumption, it did recommend eliminating the clear and convincing standard required to rebut the presumption:

An issued patent is presumed valid. Courts require a firm that challenges a patent to prove its invalidity by “clear and convincing evidence.” This standard appears unjustified. A plethora of presumptions and procedures tip the scales in favor of the ultimate issuance of a patent, once an application is filed. In addition, as many have noted, the PTO is underfunded, and PTO patent examiners all too often do not have sufficient time to evaluate patent applications fully. These circumstances suggest that an overly strong presumption of a patent’s validity is inappropriate. Rather, courts should require only a “preponderance of the evidence” to rebut the presumption of validity.<sup>250</sup>

Industry concern with the presumption also increased,<sup>251</sup> and, within a few years, the academic sphere began to give serious consideration to the issue.<sup>252</sup>

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249. See FED. TRADE COMM’N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY 8 (2003), <http://www.ftc.gov/os/2003/10/innovationrpt.pdf>.

250. *Id.* It is unclear what value the presumption would retain if it did not result in a higher burden of proof being required to prove invalidity. Arguably, reducing the burden of proving invalidity from clear and convincing to a preponderance of the evidence would so critically neutralize the presumption that it might as well not exist.

251. *Patent Quality Improvement Hearings*, *supra* note 231, at 21 (testimony of David Simon, an employee of Intel at the time) (“These patent trolls have the presumption of validity on their side. It is difficult to convince a jury of patent invalidity in light of the heightened evidentiary standard of clear and convincing evidence.”).

252. See, e.g., B.D. Daniel, *Heightened Standards of Proof in Patent Infringement Litigation: A Critique*, 36 AIPLA Q.J. 369 (2008); Alan Devlin, *Revisiting the Presumption of Patent Validity*, 37 SW. U. L. REV. 323 (2008); Roger Allan Ford, *Patent Invalidity Versus Noninfringement*, 99 CORNELL L. REV. 71, 118–19 (2013) (“One useful reform would be to eliminate the elevated burden of proof that applies to invalidity . . . .”); Mark D. Janis, *Reforming Patent Validity Litigation: The Dubious Preponderance*, 19 BERKELEY TECH. L.J. 923 (2004); Lichtman & Lemley, *supra* note 201; Joshua D. Sarnoff, Bilcare, KSR, *Presumptions of Validity, Preliminary Relief, and Obviousness in Patent Law*, 25 CARDOZO ARTS & ENT. L.J. 995 (2008); David O. Taylor, *Clear but Unconvincing: The Federal Circuit’s Invalidity Standard*, 21 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 293 (2011); Kristen Dietly,

Much of the subsequent criticism tracked the criticism of the FTC. For example, Professors Lichtman and Lemley argued that examination of patent applications at the USPTO is “so terse and imperfect” that it is difficult to justify the application of a presumption of validity to patents that issue from such examination.<sup>253</sup> Others echoed that sentiment.<sup>254</sup> A sitting federal judge, William Alsup, even penned a brief essay criticizing the presumption and the clear and convincing standard that it commands.<sup>255</sup>

Ultimately, the attention given to the issue made its way to the Supreme Court.<sup>256</sup> As described above in Part III.B, the Supreme Court unanimously<sup>257</sup> affirmed that clear and convincing evidence is required to invalidate a patent.<sup>258</sup> Though the Supreme Court relied almost exclusively on the presumption in reaching its conclusion, it expressed little to no criticism of the presumption, noting only that “[a]ny recalibration of the standard of proof remains in [Congress’s] hands.”<sup>259</sup>

It is not the purpose of this Article to thoroughly review or critique the presumption of validity or existing burdens of proof. However, the proposed ternary obviousness framework significantly implicates both and would address some of the concerns expressed by the FTC and scholars over the course of the past decade. As described in Part III, a patent should be deemed partially obvious if a challenger can prove obviousness by a preponderance of the evidence. In many cases, a determination that a claimed invention would have been partially obvious at the time of the invention would mean that the patentee is entitled to zero damages.<sup>260</sup> In those instances, the proposed obviousness framework, in effect, creates a complete affirmative defense to allegations of patent infringement that needs to be proved only by a preponderance of the evidence. Thus, the proposed

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Note, *Lightening the Load: Whether the Burden of Proof for Overcoming a Patent’s Presumption of Validity Should be Lowered*, 78 *FORDHAM L. REV.* 2615 (2010).

253. Lichtman & Lemley, *supra* note 201, at 52–53.

254. *E.g.*, Devlin, *supra* note 252, at 332 (“[D]eference to the PTO no longer constitutes a viable foundation” for rationalizing the presumption.).

255. See William Alsup, *A District Judge’s Proposal for Patent Reform: Revisiting the Clear and Convincing Standard and Calibrating Deference to the Strength of the Examination*, 24 *BERKELEY TECH. L.J.* 1647, 1648 (2009) (“The presumption of validity and the clear and convincing standard would be wise if almost all patents were, in fact, valid. My own experience, however, has been that at least one-third of patent claims asserted in litigation should never have issued.”).

256. See *Microsoft Corp. v. i4i Ltd. P’ship*, 131 S. Ct. 2238, 2242 (2011).

257. Chief Justice John Roberts did not participate in the consideration or decision of the case. *Id.* at 2241.

258. See *id.* at 2242.

259. *Id.* at 2252.

260. See *supra* note 242.

framework partially ameliorates concerns about the clear and convincing standard being an unjustified burden of proof by providing a lower burden in some cases, and it partially accomplishes the goals of those who would eliminate the presumption of validity (namely, the goal being to reduce the burden of proof) by providing a defense that does not implicate the presumption.

Complete elimination of the presumption, or wholesale adoption of a lower burden of proof for all invalidity defenses, would likely have a greater impact on patent law than would the proposed ternary obviousness framework. But the proposed framework may present a viable compromise by making the current burden and presumption more tolerable to critics without bringing about the more significant patent validity reform that would accompany elimination of the presumption or adoption of a lower burden for all invalidity defenses.

### 3. PHARMACEUTICAL PATENT LITIGATION

Although support for and opposition to a ternary obviousness framework would likely follow traditional industry lines, the pharmaceutical field is one in which the proposed framework could have a significant impact.<sup>261</sup> In 1984, Congress passed the Drug Price Competition and Patent Term Restoration Act (commonly known as the Hatch-Waxman Act).<sup>262</sup> “A central purpose of the Hatch-Waxman Act . . . is to enable competitors to bring cheaper, generic . . . drugs to market as quickly as possible.”<sup>263</sup> There can be no question that Congress has recognized the value of, and has sought to encourage, generic pharmaceuticals.

Whether deserved or not, branded pharmaceutical companies have a reputation for doing anything within their power to prolong

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261. See, e.g., Lichtman & Lemley, *supra* note 201, at 52 (“A patent holder whose patent benefits from a presumption knows that, if his development and commercialization efforts turn out successful, he likely will have a valid patent that will empower him to exploit that success. The presumption thus encourages the patent holder to spend the necessary resources. Patent holders in the pharmaceutical industry, in particular, emphasize this benefit.”); see also *id.* at 71 (“Patent holders in the pharmaceutical industry are cautious about any reform that might weaken patent strength, primarily because of the slippery slope concern that someday their patents might be targeted by well-meaning lawmakers who mistakenly think that weaker patents would mean lower drug prices and better drug availability.”).

262. Pub. L. No. 98-417, 98 Stat. 1585, 1598 (1984).

263. *Teva Pharm. USA, Inc. v. Novartis Pharm. Corp.*, 482 F.3d 1330, 1344 (Fed. Cir. 2007) (quoting 149 CONG. REC. S15884 (2003) (remarks of Sen. Kennedy)) (internal quotation marks omitted); cf. *In re Barr Labs., Inc.*, 930 F.2d 72, 76 (D.C. Cir. 1991) (“Congress sought to get generic drugs into the hands of patients at reasonable prices—fast.”).

exclusivity on drugs and to prevent generics from coming to market. The term “evergreening” is used in the pharmaceutical context to refer to efforts by branded drug companies to extend patent protection on their products “by filing a series of applications for different patents covering the same basic drug.”<sup>264</sup> For example, after obtaining an initial patent on an active pharmaceutical ingredient (“API”), branded drug companies may subsequently pursue patents on any number of offspring, including specific formulations using the API, tablets with special coatings, crystalline forms of the same drugs (polymorphs), enantiomers of the same drug, and variations on drug delivery technologies (e.g., nasal sprays, eye drops, inhalers, capsules, tablets).<sup>265</sup> In some instances, brands will obtain patent protection on inherent properties of drugs or drug formulations that are themselves already patented, but the Federal Circuit has started to limit that strategy.<sup>266</sup> Additionally, when branded companies obtain so-called “evergreening” patents, branded drug companies sometimes petition the FDA to revoke approval for drug products that do not embody the newly issued patent.<sup>267</sup> In this way, branded drug companies may effectively (and sometimes, iteratively) postpone the timeframe in which a pharmaceutical becomes part of the public domain, above and beyond the exclusivity provided by the original patent on the original drug formulation.

The purpose of this discussion is not to suggest that evergreening patents are bad. To the contrary, and as the courts have recognized, many drug improvements are new, useful, and nonobvious and should be entitled to patent protection. Nor is the purpose of this discussion to impugn the motives of branded drug companies that petition the FDA to revoke approval of older drug formulations when they develop new

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264. *Andrx Pharm., Inc. v. Biovail Corp.*, 276 F.3d 1368, 1378 n.6 (Fed. Cir. 2002) (citing Terry G. Mahn, *Patenting Drug Products: Anticipating Hatch-Waxman Issues During the Claims Drafting Process*, 54 FOOD & DRUG L.J. 245, 250 (1999) (“By filing and refiling ‘improvement’ patents for the same basic drug product, they are able to create a minefield for generic applicants.”)).

265. See, e.g., Mahn, *supra* note 264, at 250.

266. See, e.g., *Santarus, Inc. v. Par Pharm., Inc.*, 694 F.3d 1344, 1354 (Fed. Cir. 2012) (“The initial blood serum concentration resulting from administering a PPI dosage is an inherent property of the formulation, and an obvious formulation cannot become nonobvious simply by administering it to a patient and claiming the resulting serum concentrations . . . . To hold otherwise would allow any formulation—no matter how obvious—to become patentable merely by testing and claiming an inherent property.”).

267. See, e.g., *Abraxis Biosci., Inc. v. Mayne Pharma (USA) Inc.*, 467 F.3d 1370, 1373 (Fed. Cir. 2006) (noting that AstraZeneca “requested the FDA to withdraw approval on the original [drug] formulation” after AstraZeneca applied for a patent and received FDA approval on a new formulation, and that the FDA “granted the request”); see also 21 C.F.R. § 10.30 (2015) (describing FDA citizen petitions).

formulations of old drugs. To the contrary, in some cases, the new formulations legitimately are safer or more effective, fully warranting removal of the old formulations from the market.<sup>268</sup> The purpose of this discussion is simply to acknowledge that, in the pharmaceutical industry, there are particular opportunities for drug companies to engage in mischief that distorts both the purpose of patent protection and the purpose of the Hatch-Waxman Act.

Allowing decisionmakers to halve the terms of partially obvious patents would reduce that potential for mischief. Surely, it would not eliminate it. But, in some instances, evergreening patents are asserted sufficiently late in their terms that a determination that such a patent is partially obvious would be a complete defense and immediately eliminate barriers to entry for generic competitors. And, in virtually every instance, halving the term of a partially obvious patent would result in generic drugs getting to market more quickly than they otherwise would. Additionally, because evergreening patents are typically “improvement” patents, there is frequently a compelling body of prior art from which a challenger can launch an obviousness attack. Though many evergreening patents are nonobvious, it is reasonable to believe that a noteworthy percentage of evergreening patents that might survive fully intact under the binary obviousness framework might see their term cut in half under the proposed ternary obviousness framework. This provides particular effect in the Hatch-Waxman context, where a plain goal of the legislation is to get generic drugs to market as quickly and cheaply as possible.

Another effect of the proposed ternary obviousness framework in Hatch-Waxman litigation is that fewer cases may settle. Settlement of Hatch-Waxman cases typically results in one or more generic companies being allowed to enter the market prior to the expiration of a patent.<sup>269</sup> However, there is no reason to believe that settlements frequently (or even occasionally) result in a generic getting to market potentially nine years prior to patent expiration. Accordingly, when faced with the options of settlement or trying to prove obviousness by

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268. To give one example of a scenario in which removal of old formulations may be warranted, in recent years there has been a push to replace prescription opioid drugs that have been subject to widespread abuse with abuse-deterrent formulations. *See, e.g.*, Press Release, FDA, FDA Issues Final Guidance on the Evaluation and Labeling of Abuse-Deterrent Opioids (Apr. 1, 2015), <http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm440713.htm>.

269. *E.g.*, IMS INST. FOR HEALTHCARE INFORMATICS, IMPACT OF PATENT SETTLEMENTS ON DRUG COSTS: ESTIMATION OF SAVINGS 2 (2013), [http://www.gphaonline.org/media/cms/Impact\\_of\\_Patent\\_Settlements\\_on\\_Drug\\_Costs\\_Estimation\\_of\\_Savings\\_070813\\_FINAL\\_81.pdf](http://www.gphaonline.org/media/cms/Impact_of_Patent_Settlements_on_Drug_Costs_Estimation_of_Savings_070813_FINAL_81.pdf).

clear and convincing evidence, many generics choose to settle.<sup>270</sup> But, when faced with the options of settlement or trying to prove partial obviousness by a preponderance of the evidence (and thereby achieving a significantly more favorable result than settlement), more generics may choose to proceed with the obviousness challenge, having greater confidence that they will prevail under the lower burden. That could result in more generic drugs getting to market more quickly. Additionally, fewer settlements would have the peripheral benefit of decreasing fodder for Hatch-Waxman antitrust challenges, which have consumed an ever increasing amount of resources—both of the courts and of the pharmaceutical companies—over the course of the past decade.<sup>271</sup>

Thus, although the proposed ternary obviousness framework would certainly impact all areas of technology, it may have particular impact in the pharmaceutical arena.

#### CONCLUSION

Patent obviousness is one of the most challenging concepts in the law. Courts and commentators have been struggling with it for over 150 years,<sup>272</sup> and the unfortunate reality is that the analysis is just as difficult now as it was in 1850. The consequences of incorrect obviousness determinations are severe. Valid patents are eliminated, sometimes taking entire companies with them. Invalid patents are upheld, stifling innovation—and, in the context of pharmaceutical patents, reducing access to potentially life-changing or life-saving drugs.

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270. See, e.g., BUREAU OF COMPETITION, FED. TRADE COMM'N, AGREEMENTS FILED WITH THE FEDERAL TRADE COMMISSION UNDER THE MEDICARE PRESCRIPTION DRUG, IMPROVEMENT, AND MODERNIZATION ACT OF 2003, <https://www.ftc.gov/system/files/documents/reports/agreements-filled-federal-trade-commission-under-medicare-prescription-drug-improvement/141222mmafy13rpt-1.pdf> (noting that 145 settlement agreements constituting final resolutions of patent disputes between brand and generic pharmaceutical manufacturers were filed between October 1, 2012 and September 30, 2013); Kevin E. Noonan, *Lex Machina Looks at ANDA Cases*, PAT. DOCS (Nov. 5, 2014), <http://www.patentdocs.org/2014/11/lex-machina-looks-at-anda-cases.html> (noting that between 239 and 293 ANDA cases per year were filed between 2009 and 2013); see also Allison, Lemley & Schwartz, *supra* note 6, at 1777 (“[A]s our data confirms, most [patent infringement] lawsuits settle before any ruling on the merits.”).

271. Cf., e.g., *FTC v. Actavis, Inc.*, 133 S. Ct. 2223, 2227 (2013) (considering whether “reverse payment” settlements once common in Hatch-Waxman cases “unreasonably diminish competition in violation of the antitrust laws”). See generally David W. Opperbeck, *Rational Antitrust Policy and Reverse Payment Settlements in Hatch-Waxman Patent Litigation*, 98 GEO. L.J. 1303 (2010).

272. See *Hotchkiss v. Greenwood*, 52 U.S. (11 How.) 248, 266–67 (1850).

No amendment to the patent laws could ever eliminate erroneous obviousness determinations. And it is unrealistic to think that the ternary obviousness framework proposed herein would dramatically improve obviousness jurisprudence. But giving decisionmakers a third option in the obviousness analysis would better reflect the reality that it simply is not always possible to determine reliably whether a claimed invention would have been obvious at the time of the invention, and it may reduce the unpredictability and irrationality of the current obviousness analysis. The ternary framework would also provide a mechanism to reduce the severity of the “all or nothing” nature of the current analysis, potentially reducing the destructive consequences of incorrect obviousness determinations.

This Article does not purport to be an exhaustive, all-encompassing analysis of degrees of obviousness in patent law. It is intended to open the dialogue. This Article describes a problem that has long been evident, but that has never been addressed. It is time to rethink obviousness.